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ABSTRACT

This catalog of uncommon facilities in southern universities was developed in an effort to bring about more effective use of existing facilities, to reduce the need for duplicating certain facilities, and to increase learning and research opportunities. All of the facilities listed are available, under certain conditions, for use by students and faculty in the region. Facilities are catalogued according to agriculture and natural resources, biological science, computer and information services, engineering, physical sciences, social sciences, and other fields. (MJM)

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# Catalog of Uncommon Facilities in Southern Universities

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**Cover:**

**Left:** The Arthur J. Dyer Observatory, Vanderbilt University

**Upper right:** Cyclotron Control Panel Texas A & M University

**Middle right:** Archeological Site, Institute of Archeology and Anthropology, University of South Carolina

**Bottom:** Research Vessell James M. Gilliss, University of Miami

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# Foreword

This is the second catalog on uncommon facilities to be published by SREB and comes only one year after the first which was well received by academic communities. Reactions to the first catalog included reports on still more outstanding facilities which regional universities were willing to share with scholars from other institutions. Many of these are included in the new edition.

It is expected that the publication will be not only of interest to those desiring access to expensive and unusual facilities but indeed useful in the continuing efforts to explore with states and institutions other ways such resources can be shared regionally.

Winfred L. Godwin
President
Southern Regional Education Board

# Preface

This catalog has been developed in an effort to bring about more effective use of existing facilities in Southern universities, to reduce the need for duplicating certain facilities, and to increase learning and research opportunities. All of the facilities listed are available, under certain conditions, for use by students and faculty in the region.

The catalog was prepared under the guidance of the Commission on Regional Cooperation. Three steps were involved:

1) Private and public graduate institutions in the fourteen states served by the Southern Regional Education Board were asked to report uncommon and expensive installations, equipment, and holdings which might be shared on a regional basis.

2) The facilities reported were listed according to academic field and sent to selected persons in various disciplines for review. The evaluators were asked to eliminate facilities they felt were not truly uncommon or would be of limited use if made available to scholars in the region.

3) Finally, arrangements for sharing the uncommon facilities recommended by the evaluators were worked out with the institutions. In each case, an attempt was made to determine who was eligible to use the facility, what conditions were involved, and who to contact for additional access information.

Undoubtedly, some outstanding facilities have been omitted either because they were not reported by the institutions or because they are unavailable for use by outsiders. The absence of a particular facility does not imply any evaluation of it.

Several institutions reported rare archival collections. While it is recognized that these collections are uncommon, they have not been

included since they represented only a small segment of such existing collections and there are comprehensive publications which list most of them. Two good sources for library resource materials are Thomas H. English, **Roads to Research: Distinguished Library Collections of the Southeast** (Athens, Georgia: University of Georgia Press, 1968) and Philip M. Hamer, ed., **A Guide to Archives and Manuscripts in the United States** (New Haven, Connecticut: Yale University Press, 1961).

The facilities are listed alphabetically, according to the field of study with which they are usually associated. Since each one is listed only once even though it may be commonly used in several fields, a comprehensive index has been included.

The distribution of the catalog includes all colleges and universities in the region and state offices concerned with use and development of facilities in higher education. Faculty members and students who are interested in some of the facilities for research and instructional purposes are encouraged to contact the appropriate institutional representative. The catalog will also be of use to those interested in exploring possibilities for reciprocal agreements among states or institutions.

Information on additional uncommon facilities which might be included in a future publication of this nature would be appreciated, as would comments about the catalog.

William E. Hovenden
Staff Associate
Commission on Regional Cooperation
Southern Regional Education Board



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## AGRICULTURAL RESEARCH AND EDUCATION CENTERS

**University of Florida**

The two fruit and vegetable research centers provide information on problems of producation of subtropical fruits, ornamentals and winter-grown vegetables, including studies in horticulture, pathology, entomology, plant breeding and nutrition. The facilities may be used for investigations in all aspects of citrus production. One factility consists of marl soil for experimental plots, greenhouses, growth chambers and laboratories. The other includes citrus groves and plantings, greenhouses, screenhouses, growth chambers, and laboratories. Processing plants are available for research.

Faculty, graduate and post-graduate students are eligible to do research at the centers. Arrangements to use the centers will be made on an individual basis.

For access information contact: Dr. S.H. West, Assistant Dean for Research, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida 32611.

## AGRICULTURAL WATERSHEDS

**Virginia Polytechnic Institute and State University**

There are ten experimental agricultural watersheds with complex land use instrumented for hydrologic data collection. Land areas vary from approximately 180 acres to 3,000 acres. Ten to sixteen years of hydrologic data have been reduced from strip charts and stored on magnetic tape. Primary use is for hydrologic model evaluation.

Faculty and graduate students are eligible to use the facility. Arrangements to use the facility will be made on an individual basis.

For access information contact: Dr. J.P. Mason, Jr., Head, Department of Agricultural Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## ANAEROBE LABORATORY

**Virginia Polytechnic Institute and State University**

The laboratory maintains a complete catalog of the characteristics of anaerobes, i.e., bacteria which live without oxygen. The anaerobic bacteria collection is the largest in existence. This is a national reference laboratory for anaerobes from clinical infections and from normal flora. Extensive equipment is available for genetic, physiological and animal studies.

Two training courses are conducted each year in the clinical aspects of anaerobic bacteria. These courses are held in July and November. The facility may be used by qualified individuals. Rates will vary according to use.

For access information contact: Dr. W.E.C. Moore, 205 Anaerobe Laboratory, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

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## ARBORETUM

**The University of Alabama**

The Arboretum is a nature sanctuary dedicated to the study and enjoyment of trees, shrubs, flowers, ferns, and animal life. The facility is used by University classes to gain firsthand information about various aspects of botany, but other interested groups and individuals are encouraged to visit the Arboretum. It is located a few miles from the University campus, and features a very comprehensive collection of labeled trees, shrubs, and other plant life.

Open to the public, no charge.

For information contact: Dr. Frederick C. Gabrielson, P.O. Box 1927, The University of Alabama, University, Alabama 35486.

## ARBORETUM

**University of Tennessee**

The University of Tennessee Agricultural Experiment Station Arboretum is located in Oak Ridge, Tennessee, along State Route 62. The Arboretum, initiated in 1964, consists of 250 acres, most of which is forested. More than 800 individual plants including over 600 exotic species and cultivars are now established in the Arboretum. Approximately four miles of foot trails are provided for access to the plantings.

Open to the public, no charge.

For access information contact: Dr. D.M. Gossett, Assistant Dean, Institute of Agriculture, University of Tennessee, Knoxville, Tennessee 37916.

## AQUACULTURE CENTER

**Auburn University**

Facilities include a 1300-acre research area, with a series of 223 experimental ponds having a total water area of 167.2 acres. In addition, 366 plastic-lined ponds and 92 concrete ponds are available for research and teaching. The department also has at this location feed, fertilizer, processing, and equipment sheds, as well as heavy construction equipment for building ponds. Seines and other equipment necessary for research on ponds, rivers, and reservoirs, are available, as well as chemical and biological laboratories.

Qualified graduate students registered at other universities may be accepted to do their graduate research here. An occasional scientist may be accepted for a quarter or so on a post-doctoral arrangement. Each case would have to be considered on its own merits and financial arrangements for programs cannot be specified until a definite program is proposed.

For access information contact: Dr. Charles F. Simmons, Associate Dean, College of Agriculture, Auburn University, Auburn, Alabama 36830.

## BURDEN RESEARCH CENTER AND RURAL LIFE MUSEUM

**Louisiana State University**
A research facility located in the city limits of Baton Rouge for the conduct of research work in agronomy, horticulture agricultural engineering, and forestry. A museum depicting the rural life of the early sugar cane industry is included.

For access information contact: Dr. Louis Anzalone, Superintendent, Burden Research Center, Louisiana Agricultural Experiment Station, Baton Rouge, Louisiana 70803.

## COASTAL CENTER

**University of Houston**
The Center consists of more than 900 acres of Coastal Prairie, shrub and hardwoods with portions of the Center dedicated to natural preserves, instructional programs, engineering studies, and manipulative ecological studies.

Faculty, graduate students, and some undergraduates with appropriate projects, may use the facility. Prior approval of request and sign release will be required.

For access information contact: Dr. David L. Jameson, Associate Dean, Graduate School, University of Houston, Houston, Texas 77004.

## COBALT 60 IRRADIATION UNIT

**The University of Georgia**
A mechanically operated unit which permits the raising and lowering of a sealed capsule containing approximately 450 curies of cobalt 60. In the raised position, the capsule is in the center of a rotating table to permit uniform exposure of small samples of material.

Faculty and staff members with a license to use radioactive materials are permitted to use the facility on an individually-negotiated basis. Charges will be negotiated on the basis of proposed use.

For access information contact: Dr. E. Broadus Browne, Resident Director, College Experiment Station, University of Georgia, Athens, Georgia 30601.

## COMPARATIVE ANIMAL RESEARCH LABORATORY

**University of Tennessee**
Facilities at the laboratory include approximately 2,000 acres of land for maintaining livestock and growing plants to be used in experimental work, a research laboratory expecially suited to large animal work, and a unique gammairradiation field. The laboratory has provided a cooperative plant and seed irradiation program for agricultural experiment station plant breeders in the United States, especially in the Southern region.

Faculty, staff, and graduate students are eligible to use the facility. Arrangements to use the facility may be made at no cost for students.

For access information contact: Dr. John A. Ewing, Dean, 104 Morgan Hall, University of Tennessee, Knoxville, Tennessee 37916.

## ELECTRON ACCELERATOR

**North Carolina State University**
The Five Hundred KV. Insulated Core Electron Accelerator is useful for activating thin layer organic materials for chemical reaction, especially grafting. Used by other departments on campus, especially School of Agriculture and Life Sciences and School of Forest Resources.

Qualified researchers are eligible to use the facility. Operational cost: $20 per hour with a minimum charge of $100.

For access information contact: Dr. M. R. Shaw, Assistant Dean for Research, Textile, 108 Nelson, North Carolina State University, Raleigh, North Carolina 27607.

## ENTOMOLOGY AND BOLL WEEVIL REARING FACILITY

**Mississippi State University**
A complete complex for raising approximately two and one-half million sterile male boll weevils per week with a complete entomology complex for research.

Faculty, graduate students, and undergraduate students in biological and agricultural sciences are eligible to use the facility. Users will be charged the cost of supplies while conducting research projects.

For access information contact: Dr. F.G. Maxwell, Head, Department of Entomology, Mississippi State University, State College, Mississippi 39762.

## ENVIRONMENTAL EDUCATION CENTER

**Union College**
The facility consists of 100 acres with 15 buildings in the center of the Cumberland Gap National Historical Park. There are dormitories to house 150 people, dining facilities, classrooms, administration and library buildings, a gym, a laboratory, and family residences for staff. The facility is used as an environmental camp for public schools, a resident center for Union College Environmental Semester and for adult workshops and seminars.

Faculty and graduate students are eligible to use the facility. Charges will be negotiated on an individual basis.

For access information contact: Dr. Edward Baker, Director, Union College Environmental Education Center, Rural Route #2, Middlesboro, Kentucky 40965.

## ENVIRONMENTAL LABORATORY

**Mississippi State University**

Mississippi State University has access through an agreement with NASA for use of facilities at the Mississippi Test Facility in its programs. At the current time, it is being developed into an environmental laboratory and a particular effort is toward the development of ecological test ponds. A number of experiments are underway at the site by Mississippi State University personnel. Mississippi State University maintains an office at Mississippi Test Facility and living accommodations.

Available to faculty, research scientists and graduate students working in environmental sciences and engineering. MTF technical services available on cost reimbursable basis.

For access information contact: Mr. Richard A. Johnson, Manager, MSU-MTF Research Center, NASA-MTF, Bay St. Louis, Mississippi 39520.

## ENVIRONMENTAL RESOURCES CENTER

**Georgia Institute of Technology**

The Environmental Resources Center acts on the Georgia Tech campus to coordinate research and education relating to the management of water, air, land, and related resources. The Center works with public and private interests in Georgia to ascertain resource management problems that can be helped by research, with researchers at institutions throughout the state to find practical problems for them to study, and with the Office of Water Resources Research and other sources to find funds. Files of findings from completed studies are maintained.

Anyone with background or interest to do or apply resource management research is eligible to use the facility. Information if in limited supply can only be provided at the cost of reproduction.

For access information contact: Director, Environmental Resources Center, Georgia Institute of Technology, Atlanta, Georgia 30332.

## ENVIRONMENTAL SCIENCES CENTER

**Florida Atlantic University**

The facility consists of approximately 60 acres of pine, palmetto, melelucca, and pond in a natural second growth state. There are four buildings (offices, laboratory, classroom and auditorium) in addition to the natural area used for guided tours.

Faculty and graduate students are eligible to use the facility.

For access information contact: Dr. R.M. Iverson, Director, Pine Jog Environmental Sciences Center, 6301 Summit Boulevard, West Palm Beach, Florida 33406.

## FIBER MANUFACTURING FACILITIES

**North Carolina State University**

The facilities include apparatus for forming fibers by "dry spinning", apparatus for forming fibers by melt extrusion (melt spinning), and separate drawtwisting apparatus. The University also has testing laboratories for fibers, yarn and fabrics.

The facilities can be made available to qualified researchers. Operational cost for the manufacturing facilities will be approximately $18 per hour. Minimum charge $100. Costs for using the testing laboratories will range from $100-$200 per day depending on the equipment and technician requirements.

For access information contact: Dr. M.R. Shaw, Assistant Dean for Research, Textiles, 108 Nelson, North Carolina State University, Raleigh, North Carolina 27607.

## FIBER RESEARCH LABORATORY

**University of Tennessee**

Principally a cotton research lab primarily known for its design and application of instrumentation to the measurement of physical properties of cotton fibers. These include internationally used instruments for determining length frequency distribution, strength and linear density. A recent addition to the research facilities is a chemical lab which has available standard evaluation instrumentation for obtaining the standard cotton physical parameters of length, strength and fineness. When not operating under standard atmospheric conditions, the humidity in the lab can be varied over a range of approximately 35-75%. Perhaps equally as valuable is the availability of spinning and testing facilities for complementing the fiber testing facilities.

For access information contact: Dr. H.H. Ramey, Research Leader Spinning Laboratory, P.O. Box 1071, Knoxville, Tennessee 37901.

## FIBER TESTING LABORATORY

**Louisiana State University**

This laboratory, contained in a separate building on the Baton Rouge Campus, has all of the facilities necessary for testing cotton according to length and strength of fiber. Grade determinations are also made.

For access information contact: Dr. John S. Roussel, Assistant to the Director and Coordinator, Cotton Research, Louisiana Agricultural Experiment Station, P.O. Drawer E, University Station, Baton Rouge, Louisiana 70803.

## FOOD PROCESSING FACILITIES

**Virginia Polytechnic Institute and State University**

The food processing facilities include specialized and unique facilities for slaughtering and processing of all meat animals and poultry as well as processing facilities for fruit and vegetable products and

another area for dairy products processing. Almost any type of food product can be processed using either conventional methods for solid products or radio-frequency methods or high temperature-short time methods for liquid products. Quality evaluation of these products can be performed including evaluation by taste panels using the food evaluation center. Instrument laboratories that complement these facilities include atomic absorption spectrophotometry, gas-liquid chromatography, UV-visible recording spectrophotometry, an infared spectrophotometry and equipment to perform proximate analyses.

Faculty, graduate students, and technical personnel in government agencies and industries are eligible to use the facility. Cost for use of the facility will be calculated based upon cost of materials, packaging materials, utility costs, and charges for necessary labor.

For access information contact: Dr. E.N. Boyd, Division Director, Food Science and Technology Department, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24601.

**FOOD PROCESSING LINE**

**Mississippi State University**
A complete facility for research and instruction in processing foods. This facility includes all equipment for canning three-four tons per hour of peach halves in #2½ cans for consumer or market tests and a steriotort for process studies.

Qualified researchers familiar with research in food preservation by canning or freezing are eligible to use the facility. Researchers will be expected to pay direct costs for supplied and ingredients and for direct labor for handling the product both raw and processed.

For access information contact: Dr. G.R. Ammerman, P.O. Drawer T, Horticulture Department, Mississippi State University, State College, Mississippi 39762.

**FOREST**

**Clemson University**
The 17,000 acre research area contains a coastal forest, ponds, freshwater marshes, abandoned rice fields, beaches, and tidal saltwater marshes. Research and education programs are carried on through The Belle W. Baruch Research Institute in Forestry, Wildlife Science, and Marine Biology of Clemson University. The long-range research goal is to encourage biological investigations of the forest biosphere necessary to create and maintain the full esthetic and productive values of the maritime forest.

Researchers and teachers are invited to make inquiry. Arrangements to use the facility will be made on an individual basis.

For access information contact: Dr. Wm. H. Davis McGregor, Dean, Forest and Recreation Resources, Clemson University, Clemson, South Carolina 29631.

**FOREST**

**Duke University**
There are 8,500 acres of Piedmont Forest land. Timber stands range from oak hickory climax to 130 year old loblolly pine stands and include a wide variety of species in plantations from one to forty years old. Seventy-five percent of the area is within fifteen minutes of the campus by car and is well served by a network of all weather roads. Educational trails and recreational areas are an added attraction.

Scientists, faculty, and students are eligible to use the facility. Arrangements to use the facility will be made on an individual basis.

For access information contact: Director, Duke Forest, School of Forestry, Duke University, Durham, North Carolina 27706.

**FOREST**

**North Carolina State University**
Hofman Forest contains many acres of raised bogs (pocosins) that are unusual because of their geological formation and drainage patterns.

Scientists from other universities are eligible to use this facility.

For access information contact: Dr. C.B. Davey, School of Forest Resources, North Carolina State University, Raleigh, North Carolina 27607.

**FOREST**

**The University of the South**
The forest is mostly mixed hardwoods used for the forest research of faculty and the U.S. Forest Service. The 10,000 acres contain caves in the Cumberland Plateau of geological interest. Nearby are caves used by prehistoric Indians.

Eligibility to use this facility depends upon the proposed usage.

For access information contact: Chairman, Forestry Department, The University of the South, Sewanee, Tennessee 37375.

**FOREST**

**West Virginia University**
7,400 acres located 12 miles from the University. Forest types include oak, oak-hickory, yellow poplar and mixed hardwoods. With many hiking trails and interpretive trails the facility is available for teaching, research, and recreation.

Interested students and faculty members may make arrangements to use the facility.

For access information contact: Dr. Robert Dunbar, College of Agriculture and Forestry, West Virginia University, Morgantown, West Virginia 26506.

## FOREST AND ARBORETUM

**Clemson University**
The Clemson Experimental Forest covers 17,500 acres. Types represented are upland hardwood, short-leaf pine, Virginia pine, small areas of bottomland hardwood, plantations of loblolly, slash, longleaf and white pine and smaller areas of numerous other species. The arboretum is a 75-acre area, partially wooded and partially open, in which some 400 native forest tree and shrub species and species introduced from other parts of North American and foreign countries are planted for use in teaching, observation, and research in dendrology and forest genetics.

Use of the facilities by scientists and educators is welcomed.

For access information contact: Dr. R.M. Allen, Head, Department of Forestry, Clemson University, Clemson, South Carolina 29631.

## FORESTRY LABORATORY FOR RESEARCH, DEVELOPMENT, AND TESTING

**West Virginia University**
The laboratory has in the Forestry Building, a room of 10,000 square feet with a 40' ceiling, equipped with a ten-ton overhead crane and a 50' x 50' load floor. Load floor is one of only four in the country of this size.

Faculty and graduate students are eligible to use the facility. Use must be scheduled with the University several months in advance.

For access information contact: Dr. Robert Dunbar, Dean, College of Agriculture and Forestry, West Virginia University, Morgantown, West Virginia 26506.

## HORTICULTURE CENTER

**University of Southwestern Louisiana**
The Ira Nelson Horticulture Center consists of a greenhouse range, conservatory, horticulture library, herbarium (horticulturally oriented), plant collection of herbaceous and woody plant materials, evaluation of new plant introductions from USDA and Latin America collecting trips.

Faculty, graduate and upper level undergraduate students are eligible to use the facility. Arrangements to use the facility will be made on an individual basis.

For access information contact: Head, Department of Plant Industry and General Agriculture, Box 4492, University of Southwestern Louisiana, Lafayette, Louisiana 70501.

## INSECT COLLECTION

**Virginia Polytechnic Institute and State University**
This collection of over 150,000 specimens is used intensively for teaching programs. The collection represents more than 80 years of work

by a large number of scientists. An important part of the collection is a herbarium of insect and mite damage. This herbarium provides for rapid identification of insects who are destroying crops and forests.

Data from this collection is published in a series of publications sponsored by the Research Division of Virginia Polytechnic Institute and State University. Facilities are available for persons involved in the study of Entomology. Specimens are available for loan to qualified institutions.

For access information contact: Dr. Michael Kosztarab, Department of Entomology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## INSTITUTE OF ECOLOGY

**The University of Georgia**

Institute of Ecology, Savannah River Ecology Laboratory is located at the Savannah River Atomic Plant near Augusta, Georgia. The facility has unique equipment and staff for regional environmental science work.

Persons from other institutions are encouraged to use the laboratory. This will be done through a use-agreement with the AEC and their institution. The institute will provide routine services. If special facilities are needed, the user must provide for these from his own institutional funds.

For access information contact: Dr. Frank B. Golley, Executive Director, Institute of Ecology, Rockhouse, University of Georgia, Athens, Georgia 30602.

## INTERNATIONAL CENTER FOR ARID AND SEMI-ARID LAND STUDIES

**Texas Tech University**

The Center coordinates and encourages studies on arid and semi-arid lands and their inhabitants within the University; collects and exchanges information internationally and with other institutions; conducts symposia on dry-land problems and publishes proceedings; undertakes projects under contract by means of independent nonprofit corporation (ICASALS, Inc.); publishes newsletter with international circulation; prepares curriculum leading to magisterial degree in arid land studies; cooperates with other arid land institutions in joint projects such as conferences, bibliographies, data compilation; cooperates with local and state governmental units in technical problems; entertains foreign visitors interested in arid land studies.

All interested persons are eligible to use the facility.

For access information contact: Dr. Frank B. Conselman, Director, International Center for Arid and Semi-Arid Land Studies, Post Office Box 4620 Texas Tech University, Lubbock, Texas 79409.

**MASTITIS RESEARCH LABORATORY**

**Louisiana State University**
A fully equipped laboratory to conduct basic studies on mastitis. The laboratory is adjacent to the dairy. Applied research can also be implemented.

University personnel interested in research of this nature are eligible to use this facility.

For access information contact: Mr. Dawson Johns, Superintendent, North Louisiana Hill Farm, Route 1, Box 10, Homer, Louisiana 71040.

**NATIVE PRAIRIE PROJECT**

**University of Texas**
A four acre plot of virgin prairie with native plants unspoiled by any direct or indirect contribution by man

The facility may be used by plant biologist, range land and soil scientist.

For access information contact: Dr. Patrick L. Odell, Executive Dean of Graduate Studies, University of Texas, Dallas, Texas 75230.

**NATURE PRESERVES**

**Randolph-Macon Woman's College**
The College owns two tracts of land outside of Lynchburg which are held and used as nature preserves. Together they constitute about 75 acres. They are used by students and faculty for observing plants and small animal life development in an undisturbed setting.

Faculty members, undergraduate and graduate students are eligible to use the facility. An institution or scholar using the nature preserve is asked to submit to the Biology Department a report on any study undertaken.

For access information contact: Dr. Franklin F. Flint, Chairman, Department of Biology, Randolph-Macon Woman's College, Lynchburg, Virginia 24504.

**PULP AND PAPER LABORATORY**

**North Carolina State University**
The laboratory contains specialized equipment for converting wood and wood pulp to finished paper including digesters, refiners and a paper machine. Also available are facilities for wood preparation, wood chemistry, pulp testing and paper coating.

Scientists from other universities are eligible to use the facility. There may be a charge, depending upon specific use of facility.

For access information contact: Dr. Irving Goldstein, Department of Wood and Paper Science, School of Forest Resources, North Carolina State University, Raleigh, North Carolina 27607.

## RANCH HEADQUARTERS

**The Museum of Texas Tech University**

A collection of historical buildings depicting the free ranching era of Texas located on a twelve acre site adjacent to the main museum. Capacity is highly variable with the buildings being of different sizes. Its use is primarily to depict the heritage and development of the ranching industry in Texas. It is used educationally in the area of historical architecture as well.

Anyone interested in historical architecture and/or preservation is eligible to use the facility. No fee as such will be charged other than reimbursement of out-of-pocket expenses.

For access information contact: Mrs. Betty R. Moxley, Program Supervisor, The Museum of Texas Tech University, Post Office Box 4499, Lubbock, Texas 79409.

## RHIZOTRON

**Auburn University**

The facility is used to study the movement of roots in the soil and the effects of mechanical condition of the soil on root growth. The facility is also for use in graduate and upper level undergraduate instruction in agricultural engineering and soils.

Qualified graduate students, as can be accommodated, will be permitted to use the facility. A period of several weeks could probably be arranged for a qualified scientist to do special work at the facility. Arrangements will have to be worked out individually and charges will vary according to the nature of the projects.

For access information contact: Dr. Charles F. Simmons, Associate Dean, College of Agriculture, Auburn University, Auburn, Alabama 36830.

## SCANNING ELECTRON MICROSCOPE AMR MODEL 900

**Virginia Polytechnic Institute and State University**

This equipment is used in microstructural and fracture studies of metals and alloys at high magnification. Imaging by secondary electrons, back-scattered electrons, transmitted electrons and x-rays is available. Observation while specimen is undergoing tensile deformation is possible using loads up to 200 lb. Complete energy-dispersive x-ray analysis also available. Accelerating voltage of 5-25 kv, magnification range is 20-50,000 X.

Faculty, graduate students, and undergraduate students may utilize the equipment for instructional and research purposes. The equipment is available on a rental basis.

For access information contact: Dr. Jack L. Lytton, Department of Metallurgical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24601.



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### SCANNING ELECTRON MICROSCOPE

**University of Virginia**

The facility is used primarily for the examination of surface features of both biological and non-biological (metals, ceramics, etc.) materials at magnifications up to 20X-50,000X. It has stereo microscopy capabilities and great depth of field. X-ray elemental analysis for all elements above flouride can be carried out for any part of the specimens.

Faculty and graduate students are eligible to use the facility. There will be a charge of approximately $25 per hour.

For access information contact: Dr. Kenneth R. Lawless, Department of Material Science, Thornton Hall, University of Virginia, Charlottesville, Virginia 22901.

### SEED TECHNOLOGY COMPLEX

**Mississippi State University**

Completely equipped laboratory for research and development work in seed drying, cleaning, processing, handling and packaging, treating, and quality evaluation.

Faculty, graduate students and researchers from industry and government agencies, and other countries are eligible to use the facility. Sharing load is to be dependent on in-house utilization of facilities at any particular time. For most cases, sharers will have to finance their own expendable supplies, any special equipment not available and pro-rata share of utility and operational costs. Equipment damaged in use will have to be repaired or replaced.

For access information contact: Dr. James C. Delouche, Agronomist In Charge, Seed Technology Laboratory, Mississippi State University, Mississippi State College, Mississippi 39762.

### SOUTHERN WATER RESOURCES SCIENTIFIC INFORMATION CENTER

**North Carolina State University**

The center provides on-line computer based information searching covering literature of water resources.

All persons concerned with water resources may use the service of the center on a fee basis: $35 per search or $300 annual fee for 20 searches.

For access information contact: Mrs. Susan Rose, Head, Southern Water Resources Scientific Information Center, North Carolina State University, D.H. Hill Library, P.O. Box 5007, Raleigh, North Carolina 27607.

### SUGAR FACTORY

**Louisiana State University**

The Audubon Sugar Factory is a small scale version of typical Louisiana factories which produce raw sugar from sugar cane. The facility

processes about 30 tons of cane per operating day (about 25-30 days in the period October 15-December 15), producing two or three tons/day of raw sugar, plus 10-15 tons of bagasse and molasses. The factory is used for both instruction and research, primarily in the fields of chemical engineering and sugar engineering.

Arrangements can be made to use the facility for sugar-oriented research or testing. All projects should be substantially self-supporting. Costs for using the facility will be determined by the nature of the project.

For access information contact: Dr. John J. Seip, Superintendent of the ASF, Louisiana State University, College of Engineering, Baton Rouge, Lousiana 70803.

## TILLAGE MACHINERY LABORATORY

**Auburn University**

The National Tillage Machinery Laboratory of the U.S. Department of Agriculture is located on the campus and is used for instruction and research at the graduate level in agricultural engineering, soil dynamics, and plant physiology.

Arrangements can be worked out to permit qualified people (faculty members, graduate students) to use the facility as long as use does not interfere with its mission. Users may have to provide certain costs that pertain specifically to their research. Where the research contributes directly to the mission of the facility these costs will probably be waived.

For access information contact: Dr. Charles F. Simmons, Associate Dean, College of Agriculture, Auburn University, Auburn, Alabama 36830.

## TOBACCO LITERATURE SERVICE

**North Carolina State University**

The service is unique and furnishes valuable assistance to tobacco scientists throughout the world. The time saved for scientists by collecting, abstracting, and synthesizing all literature pertaining to tobacco is impossible to assess in terms of money. The reprint service connected with the library is important to individual investigators and serves to publicize North Carolina research achievements to the rest of the world.

For access information contact: Ms. Carmen Marin, Director, Tobacco Literature Service, D.H. Hill Library, P.O. Box 5007, North Carolina State University, Raleigh, North Carolina 27607.

## VARIABLE DOSE RATE IRRADIATION FACILITY

**The University of Tennessee / Atomic Energy Commission**

A highly flexible cobalt-60 gamma irradiation facility capable of providing precisely controlled exposure rates from 1 R to thousands of R per minute. Six radial-field 6000 curie irradiations are distributed in a

2 x 3 array on 20 foot centers inside a large (33' x 54') irradiation room to provide uniform irradiation over large regions. Primarily used for radiation studies with large animals and bulk irradiation of seeds and plants. Occasionally used for special purpose medical radiotherapy.

Researchers and other professional investigators from academic and federal research laboratories are eligible to use the facility. The facility is generally available on a reservation basis. A charge is not usually made unless extensive set up time or special procedures requiring considerable services of CARL radiation personnel are required.

For access information contact: Director, UT-AEC Comparative Animal Research Laboratory, 1299 Bethel Valley Road, Oak Ridge, Tennessee 37830.

**WOOD PRODUCTS LABORATORY**

**North Carolina State University**
One of the largest and most completely equipped laboratories for the conduct of training and research in wood technology. This structure houses machining, gluing, finishing, preserving, testing and research laboratories as well as a sawmill, dry kiln and veneer lathe.

Scientists from other universities are eligible to use the facility. A charge may be assessed, depending on specific use of facilities.

For access information contact: Dr. Irving Goldstein, Department of Wood and Paper Science, School of Forest Resources, North Carolina State University, Raleigh, North Carolina 27607.

**WOOD UTILIZATION LABORATORY**

**Mississippi State University**
A complete facility for testing wood products and treating wood products, developing new wood products and finishing wood products.

Faculty members from other institutions, graduate students, research personnel from state and federal laboratories are eligible to use the facility.

For access information contact: Dr. Warren S. Thompson, P.O. Drawer FP, Mississippi State University, State College, Mississippi 39762.

## ANALYTICAL TOXICOLOGY LABORATORY

**University of Florida**

The facility provides assays not within the scope of the usual clinical laboratory. It provides data and recommendations to physicians regarding the relative hazard to life that a determined toxic concentration may exert; and also suggests to physicians the physiologic means of hastening the reduction of this toxic concentration, and possibly a drug regimen that would help normalize the subject's physiologic condition. The laboratory also provides training at the undergraduate and graduate levels in analytical toxicology, in addition to its research activities.

Clinical chemists, clinical pharmacologists, faculty, graduate and advanced undergraduate students are eligible to use the facility. A charge will be made for routine assay services, although most services are made without charge.

For access information contact: Dr. Richard H. Hamman, Director, Analytical Toxicology Laboratory, College of Pharmacy, Box 779 MSB, University of Florida, Gainesville, Florida 32610.

## ARTIFICIAL ORGAN RESEARCH UNIT

**University of Mississippi Medical Center**

This interdisciplinary team comprises exceptional research capability in the development of artificial organs, particularly the artificial heart.

Qualified investigators may make arrangements to use the facility.

For access information contact: Dr. T. Akutsu, University Medical Center, 2500 North State Street, Jackson, Mississippi 39216.

## ANTHROPODOLOGY AND PARASITOLOGY INSTITUTE

**Georgia Southern College**

The institute coordinates an area of exceptional research strength within the Department of Biology. Studies and research emphasize development, physiology genetics, cytogenetics, reproductive biology and bionomics of selected arthropods, nematodes, trematodes, and cestodes of regional and international importance.

The facility is available at minimum cost by individual arrangements.

For access information contact: Dr. Edwin T. Hibbs, Head, Department of Biology, Georgia Southern College, Statesboro, Georgia 30458.

## BIOENGINEERING CENTER

**Georgia Institute of Technology**

The Biomedical Research Laboratory and Animal Surgical Facility occupies approximately 600 square feet of floor area in the new Engineering Experiment Station Building. The facility is for cardiovascular and orthopedic experiments.

The facility is available for use by qualified staff members and students. Arrangements to use the facility will need to be made on an ad hoc basis depending upon the time and existing circumstances.

For access information contact: Mr. Fred Dixon, Associate Director, Bioengineering Center, Georgia Institute of Technology, Atlanta, Georgia 30332.

**BIOFEEDBACK LABORATORY**

**Nova University**
The facility consists of a six room biofeedback laboratory, Grass Polygraph, Biofeedback Electromygraph, and a Wave Criterior Analyzer. The laboratory equipment is capable of monitoring and feeding back to the subject such physiological functions as brain waves, striated muscle tension, skin temperature, respiration rate and heart rate.

Faculty and graduate students are eligible to use the facility.

For access information contact: Dr. William Love, Biofeedback Laboratory, Nova University, 3301 College Avenue, Ft. Lauderdale, Florida 33314.

**BIOLOGICAL STATION**

**North Carolina State University**
Highlands Biological Station, Inc. is an inland biological field station located at Highlands, North Carolina. The area has an extremely diverse and interesting biota and the highest rainfall in the eastern United States. The facilities are available throughout the year for pre- and post-doctoral research in botany, zoology, soils and geology. The laboratory building with research rooms and cubicles and the library are well equipped for pursuit of field research problems.

For access information contact: Dr. Richard Bruce, Highlands Biological Station, Highlands, North Carolina 28741.

**BIOLOGICAL STATION**

**Tennessee Technological University**
The Tech Aqua Biological Station occupies 550 acres of land on the southern shore of Center Hill Reservoir, including seven miles of shoreline. Davies Island, one mile east of the station, provides an excellent study site of approximately 1,000 acres isolated from the mainland.

Faculty members and graduate students are eligible to use the facility.

For access information contact: Dr. Robert E. Martin, Director, Tech Aqua Biological Station, Cookeville, Tennessee 38501.

**BIOLOGICAL STATION**

**Texas A&I University**
Only biological station located on a coastal hypersaline environment

in the United States. The Station is situated on 140 acres adjoining Baffin Bay Texas. A laboratory building for teaching and research is on the site.

Faculty members and graduate students are eligible to use the facility. The building and utilities, plus limited basic supplies associated with a laboratory will be furnished. Any special supplies or equipment must be furnished by the researcher. At the present time there is no financial charge.

For access information contact: Dr. J. Talmer Peacock, Professor and Chairman, Department of Biology, Texas A&I University, Kingsville, Texas 78363.

**BIOLOGICAL STATION**

**Union College**

The Biological Station consists of 17 acres on the Lake Norris shore with living facilities, laboratories, library and boats necessary for research and specimen gathering from the lake.

For access information contact: Mr. Charles C. Saddler, Assistant to the President, Union College, Barbourville, Kentucky 40911.

**BIOLOGICAL STATION**

**University of Florida**

The Seashore Key Biological Station is located on an island three miles offshore from Cedar Key in the Gulf of Mexico. Research facilities are limited but opportunities for studying marine organisms in a relatively unpolluted environment are superb. Running sea water is piped into the laboratory. A 32' twin engine vessel is available for inshore studies and several smaller boats are used for transportation to and from the island and for research. Living quarters, including a common kitchen, are available for small groups up to 15.

Faculty, graduate students, and qualified scientists are eligible to use the facility. A small charge will be made for use of the facility.

For access information contact: Dr. Frank J.S. Maturo, University of Florida, 1 Flint Hall, Gainesville, Florida 32611.

**BIOLOGICAL STATION**

**University of Virginia**

The Mountain Lake Biological Station is an inland field station for research and teaching in the biological sciences. It is located in the Allegheny Mountains of southwestern Virginia at an altitude of 4000 feet. A large laboratory and supporting facilities provide opportunities for summer research. A smaller laboratory, with an attached efficiency apartment, offers accommodation for research year round.

Anyone with a bona fide research program may apply to work at the Station. There will be a $1.00/night dormitory charge during the off-season.

For access information contact: Director, Mountain Lake Biological Station, Department of Biology, University of Virginia, Charlottesville, Virginia 22903.

## BIOLOGICAL STATION

**West Virginia University**

The Terra Alta Biological Station contains approximately 67 acres. It is located on such an area where numerous biological specimens and ecological types are available. Housing and food facilities are available for about 35 individuals. Laboratory teaching and rooming facilities are separate.

Classes, workshops, faculty, graduate students, and undergraduate students are welcome. Conditions will be dependent upon time of need so as to prevent conflict with regularly scheduled events. Cost will be negotiated.

For access information contact: Dr. E.C. Keller, Jr., Biology Department, West Virginia University, Morgantown, West Virginia 26506.

## BIOLOGICAL STATION, KENTUCKY LAKE

**Murray State University**

The biological station is situated on 63 acres of woodland on the west shore of Kentucky reservoir in Kentucky. The physical plant presently consists of two buildings completed in late May, 1972. The station includes seven research laboratories, six offices or spaces for independent research, two lecture rooms, one library. Facilities for short-term lodging are provided for students and investigators (includes room equipped with beds, showers, electricity, to accommodate 16-20 people).

The facilities are available for independent investigations at any time of the year. Charges, if any, will depend on intended use of the facility.

For access information contact: Dr. Hunter M. Hancock, Chairman, Department of Biological Sciences, Murray State University, Murray, Kentucky 42071.

## BIOLOGY BIOME

**University of Miami**

A small part of the campus adjacent to the Science Building was planned in 1968 as a man-made natural area instead of a conventional landscape design. Land was contoured to include a pool and an artificial sink hole. The area now has the following natural plant communities of southern Florida: pineland, tropical hammock, everglades, and cypress, slough, and a limestone sink. These are ecologically related as they occur in the everglades ecosystem. Ecology and taxonomy students use the area as a laboratory and for specimens.

The facility is open to all. No charge is anticipated.

For access information contact: Dr. Taylor R. Alexander, Biology Department, University of Miami, Coral Gables, Florida 33124.

**BIOMEDICAL LABORATORY**

**Louisiana Tech University**
The Biomedical Engineering Laboratory was developed to permit systems analysis of cellular microenvironments. The laboratory features such items as multi-channel high-frequency electronic recorders and plotters, electromagnetic blood flowmeters, ultramicro electrodes, on-line computer simulation and other related electronic instrumentation.

Informal arrangements can be made to use the facility.

For access information contact: Dr. Daniel D. Reneau, Head, Department of Biomedical Engineering, Louisiana Tech University, Ruston, Louisiana 71270.

**BIRD COLLECTION**

**University of Mississippi**
The Vaiden Collection of preserved bird skins comprises 170 species and 3,600 specimens.

Faculty and qualified scientists may borrow skins for study. There will be no financial charge, except that borrower will pay return postage on the specimens.

For access information contact: Dr. Y.J. McGaha, Curator of the Zoology Museum, Room 206, Biology Building, University, Mississippi 38677.

**BIRD EGG COLLECTION**

**Clemson University**
The H.L. Harlee Collection is the eighth largest collection of bird eggs in the United States and one which is well preserved and catalogued. The collection has considerable intrinsic value but, more importantly, it documents the quality of egg shells prior to the advent of chlorinated hydrocarbons in the ecosystem.

Arrangements to use the facility will be made on an individual basis.

For access information contact: Dr. Averett S. Tombes, Department of Zoology, Clemson University, Clemson, South Carolina 29631.

**BIRD SKINS AND BIRD EGGS**

**Virginia Polytechnic Institute and State University**
This collection includes a reference library as well as 20,000 skin specimens and a substantial number of bird eggs. The uniqueness of this collection is the fact that the specimens were accumulated from 1850 to 1930. The species were collected throughout the Southeastern portions of the United States. This collection also contains 10,000 mammal specimens.

The facility may be used by students whose area of study relates to the collection.

For access information contact: Dr. C.S. Adkisson, 409c Derring Hall, Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## BONE METABOLISM RESEARCH LABORATORY

**Texas Woman's University**
The facility conducts bone mineral analyses utilizing radiographic densitometry, electron microscopy, and laboratory analyses. It evaluates therapies for correction of metabolic bone disease and chronic bone demineralization.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dean of the Graduate School, Box 22479, TWU Station, Denton, Texas 76204.

## BURNS INSTITUTE

**Shriners Burns Institute**
The facility includes a patient-care oriented specialty referral hospital for burned children; research institute with all acitivities directed toward improving techniques in caring for acute and reconstructive burn cases, and an educational institute with total affiliations of medical, scientific, nursing, and para-medical departments with the University of Texas Medical Branch. Developments in patient care and burn prevention are disseminated freely to interested medical care institutions and to the public.

Faculty, graduate students, and other individuals in allied science are eligible to use the facility. No charge is anticipated.

For access information contact: Dr. Duane L. Larson, Medical Director and Chief of Staff, Shriners Burn Institute, 610 Texas Avenue, Galveston, Texas 77550.

## CANCER RESEARCH AND TRAINING CENTER

**The University of Alabama in Birmingham**
This new interdisciplinary unit is constructing a Tumor Institute for basic investigations, a Radiation Therapy facility, and the Lurleen Wallace Cancer Hospital. Several clinical therapy trial groups, including the Southeastern Cancer Chemotherapy Group, the Interdisciplinary Gynecologic Oncology Group, and the Radiation Therapy Oncology Group are participating in national cooperative clinical trials.

Qualified individuals interested in experimental cancer chemotherapy and Nuclear Magnetic Resonance probes for H2, C13, N15, O17, F19, NA23, and P31 may apply to use the facility. Arrangements will be set on an individual basis.

For access information contact: Dr. John R. Durant, Director of the Cancer Research and the Training Program, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

### CARDIOVASCULAR RESEARCH AND TRAINING CENTER

**The University of Alabama in Birmingham**
Performs basic and clinical research on problems related to diseases of the heart and blood vessels. The Center's staff includes scientists from cardiovascular surgery, medical cardiology, physiology, pharmacology, pathology, biophysics, epidemiology, biomathematics, and computer sciences.

Any faculty member, given appropriate circumstances, is eligible to use the facility. The principal condition is a valid and mutually useful scientific interest. Costs involved are variable and negotiable.

For access information contact: Dr. Thomas N. James, Director, Cardiovascular Research and Training Center, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

### CHILDREN'S REHABILITATION CENTER

**University of Virginia**
This facility is for handicapped children and provides facilities for the care and rehabilitation of children with a variety of chronic disorders, such as cerebral palsey, muscular dystrophy, spina bifida, speech and hearing defects, rhuematoid arthritis, congenetal heart disease, chronic renal disease, conditions resulting from inborn errors in metabolism, amputations, and learning disabilities.

There is particular interest in sharing the facility with individuals from the following areas: nursing, social work, learning disabilities, occupational therapy, physical therapy, and recreational therapy. No charge is anticipated.

For access information contact: Dr. Sharon L. Hostler, Children's Rehabilitation Center, Route 250, West, Charlottesville, Virginia 22901.

### COASTAL FIELD LABORATORY

**University of South Carolina**
The facility is a 5,000 square foot field laboratory located on the edge of North Inlet Estuary associated with the 17,500 acre property of the Belle W. Baruch Foundation, Georgetown, South Carolina. This laboratory is for the use of qualified scientists who are investigating marsh and estuarine processes. Small boats and collecting equipment are available.

Faculty, graduate and undergraduate students are eligible to use the facility. A small cost for laboratory space and boat usage will be charged visiting scientists.

For access information contact: Dr. F. John Vernberg, Director, Belle W. Baruch Coastal Research Institute, University of South Carolina, Columbia, South Carolina 29208.

## COLLECTION OF AMPHIBIANS AND REPTILES

**University of Southwestern Louisiana**
This collection consists of over 23,000 specimens of preserved amphibians and reptiles—all specimens are catalogued and with data. Also, there are 500 skeletal specimens.

All faculty members, graduate students, and qualified undergraduates have access to this collection. In addition, specimens are shipped to museums and universities in the U.S. and other countries. Other than postage, there will be no charges for loans.

For access information contact: Dr. E.D. Keiser, Curator of Amphibians and Reptiles, Associate Professor of Biology, Department of Biology, University of Southwestern Louisiana, Lafayette, Louisiana 70501.

## CONSERVATION RESERVE

**University of Florida**
Approximately 2,500 acres are included in the Reserve located on the east shore of the St. Johns River at Welaka. Opportunities are available for making detailed field studies concerned either with terrestrial or aquatic habitats. One fresh-water spring and its run are located entirely within the Reserve and several large ponds are available. Fire has been kept out of certain inviolate areas for nearly forty years providing unique hardwood forests for study. Living quarters include both well equipped apartments and dormitories. Groups of up to 50 can be accommodated.

Qualified investigators are eligible to use the facility. A very small fee will be charged for the use of the living quarters.

For access information contact: Dr. Harold Gornto, Conservation Reserve, University of Florida, Post Office Box 306, Welake, Florida 32093.

## CORNEAL RESEARCH EQUIPMENT

**University of Houston**
The equipment includes a photokeratoscope to measure the corneal topology and a light scattering device to measure any alteration in the corneal physiology. The El Hage photokeratoscope, based on a telecentric system, consists of nine diffused rings. The light scatter device consists of a Zeiss biomicroscope slit lamp, a scanning micrometer eyepiece, a fiber optic, photomultiplier, a photometer, a storage oscilloscope and a pen writer.

Faculty and graduate students are eligible to use the facility. Charges for using the facility are not anticipated.

For access information contact: Dr. Sami G. El Hage, Associate Professor, University of Houston, College of Optometry, Houston, Texas 77004.

### 30,000 CURIE $CO^{60}$ SOURCE

**Florida Institute of Technology**
30,000 Curie Cobalt 60 are in a retaining ring in the bottom of a 24' water tank. The tank holding the Gamma Ray sources is a 4.5' diameter, 3/16" thick, stainless water tank located in a concrete enclosed holding 24' deep. The eight B and L strips of Cobalt has a 12" circular cavity in which samples can be inserted. The irradiation rate as of the first of November, 1972 is approximately one megarad per hour.

Faculty members and graduate students are eligible to use the facility. As all work within the facility must be supervised by one of the Radiation Safety Committee, a $15.00 per hour charge is anticipated.

For access information contact: Dr. David D. Woodbridge, Director, University Center for Pollution Research, Florida Institute of Technology, Melbourne, Florida 32901.

### DELTA REGIONAL PRIMATE RESEARCH CENTER

**Tulane University**
The Center occupies a 500-acre tract near Covington, Louisiana. Investigations are being conducted in cancer, neurobiology, biochemistry and infectious diseases.

Facilities including laboratory space,animal-holding areas and a considerable investment in specialized laboratory equipment are available for research use by investigators from the region. Prior to writing proposals, principal investigators should contact the Center for charges related to any use of the facilities beyond tours and observation.

For access information contact: Dr. Peter J. Gerone, Director, Delta Regional Primate Research Center, Three Rivers Road, Covington, Louisiana 70433.

### DRUG ABUSE CENTER

**The University of Alabama in Birmingham**
A fully staffed inpatient facility for the treatment, by a team approach, of drug abusers requiring detoxification, withdrawal and rehabilitation.

Post M.D.'s interested in specialized training in clinical drug abuse care and in basic drug abuse research are eligible to use the facility. Costs are variable and negotiable.

For access information contact: Dr. Patrick H. Linton, Chairman, Department of Psychiatry, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

### DRUG INFORMATION SERVICE

**University of Florida**
The facility provides information on drug availability, dosage, identi-

fication, therapeutic use, compatibility and/or stability, bioavailability, contraindications, adverse effects, toxicity, metabolism, reactions, and interactions. It is staffed by faculty, residents, and students, with a multidisciplinary panel of specialists available for consultation.

All health professionals are eligible to use the facility. No cost is anticipated.

For access information contact: Mr. M. Peter Pevonka, Director, Drug Information Service, College of Pharmacy (Box 779MSB), University of Florida, Gainesville, Florida 32610.

## ECONOMIC BOTANY COLLECTION

**University of Miami**

The facility consists of a specialized reference and research department devoted to the acquisition classification and maintenance of data in the field of economic botany and, in much lesser degree, of economic zoology. Its resources include more than 200,000 items of data collated in approximately 30,000 classified subject files of plant and animal species and of recognized food adjuncts from the arctic and antarctic to the tropics.

Faculty, graduate and undergraduate students are eligible to use the facility. There will be a nominal charge for photocopies of materials.

For access information contact: Dr. Julia Morton, Director, Morton Collectanea, University of Miami, Coral Gables, Florida 33124.

## ELECTRODIAGNOSTIC CLINIC

**University of Houston**

The facility enables recording and analyzing eye and brain waves for the detection and analyzing of vision anomalies and pathology. Objective measures of visual and sensory function based upon electrophysiological responses are utilized. Test procedures include electrooculography (EOG), electroretinography (ERG), and the visual evoked response (VER).

Faculty, graduate students, and advanced undergraduates are eligible to use the facility. Conditions and charges for using the facility will be detemined on an individual basis.

For access information contact: Dr. Samuel C. Rawlings, Assistant Professor of Physiological Optics, University of Houston College of Optometry, Houston, Texas 77004.

## ENTOMOLOGY COLLECTION

**North Carolina State University**

The Tippmann Collection is one of the most comprehensive in the field of entomology in the United States.

Available to faculty members and graduate students; items may be borrowed on interlibrary loan.

For access information contact: Inter-library Center, D.H. Hill Library, North Carolina State University, P.O. Box 5007, Raleigh, North Carolina 27607.

### ENVIRONMENTAL RESEARCH LABORATORY

**Duke University**

The facility consists of six covered environmental chambers capable of simulating exposures to altitude (to above 100,000 feet) and depth (equivalent to 1,000 feet below the surface of the ocean), under varied conditions of temperature, humidity, and breathing medium. There is a concurrent acceptable capability for performing pertinent biomedical measurements. The facility is used for animals, health humans and for clinical investigations in certain illnesses. The empasis of the program is to determine how exposure to unusual environments affects the health of man and how to protect him when so exposed. The simulation capability includes exposure to extremely cold water at increased barometric pressures simulating deep dives.

Faculty, graduate students, and qualified investigators are eligible to use the facility. Arrangements to use the facility will be made on an individual basis.

For access information contact: Dr. Herbert A. Saltzman, Professor of Medicine, Box 2904, Duke Medical Center, Durham, North Carolina 27706.

### EXTREME ULTRAVIOLET LABORATORY

**The University of Texas at Dallas**

The equipment includes a 0.5m Seya-Namioka type McPherson monochromator outfitted with a two stage differentially pumped input slit that allows windowless operation of the sources to several hundred Torr. A 18" dia. x 24" vacuum chamber is available for use on the exit slit. Detectors include a flowing gas double ionization chamber, spiraltrons and coated photomultiplier. The facility provides calibrated continuous and line spectra in the 30-100 nm wavelength region.

For access information contact: Dr. A.B. Christensen, The University of Texas at Dallas, P.O. Box 30365, Dallas, Texas 75230.

### FAST-BIOS LABORATORY

**Texas Christian University**

A laboratory designed to determine rapidly the structures of biologically interesting molecules. The facility combines computer-controlled X-ray diffraction with NMR and mass spectrometry. The intent is to develop a unique facility available to scientists within the region. There is no facility which now offers this opportunity to scientists.

Any structural problem of high scientific priority will be considered by the FAST-BIOS laboratory. Room is available for graduate students who wish to collect and process their own data. At present, there is

no charge for use of the equipment. There will be a charge for the computer time. The amount of computer time will depend upon the nature of the compound and the degree of refinement required.

For access information contact: Dr. William H. Watson, Chemistry, Texas Christian University, Fort Worth, Texas 76219.

## FIELD LABORATORY

**University of Texas**
The Brackenridge Field Laboratory is an 80 acre lakeshore tract. It is primarily a facility for experimentation with plant and animal populations under semi-natural conditions. Installations include 13 one-acre enclosures with animal-proof fences. There are some enclosures with ponds; some dry; other unfenced ponds. There is a seven-acre plant transplant garden. Electrical outlets throughout are for use of recording and monitoring instruments. There is a supporting laboratory building as well as greenhouses.

Faculty, graduate students, and visiting scientists are eligible to use the facility. There is no charge for use of the facility.

For access information contact: Dr. W. Frank Blair, Professor of Zoology and Director of Brackenridge Field Laboratory, Post Office Box 7366, Austin, Texas 78712.

## FIELD STATION FOR ANIMAL BEHAVIOR STUDIES

**Duke University**
The facility consists of a wooded area some 85 acres in extent, two miles distant from the campus center. It is surrounded by a belt of densely forested land and by a seven foot chain link fence which serves to separate its licensed inhabitants from unwanted interlopers. The former include deer, raccoons, geese and ducks of several species, to list a few. Adjoining this fenced area are a series of buildings that provide adjunct facilities. These include the primate facility, housing for students, barns, and tool houses.

All interested individuals are eligible to use the facility. No charge is anticipated.

For access information contact: Dr. Peter H. Klopfer, Zoology Department, Duke University, Durham, North Carolina 27706.

## FIELD STUDY AREA

**Valdosta State College**
The facility consists of a 173 acre tract of forested land including a 13 area limesink pond. The land area includes swamp, pinewoods, and sand ridge type flora and fauna. The pond is suitable for aquatic biology and limnology studies; the depth ranges from 10-25 feet overmost of the area and the bottom is covered by a layer of organic matter approximately 50 feet thick. Pollen core analyses and radiocarbon dating reveal that the older sediments were deposited about 8,000 years ago.

Faculty, graduate students, and qualified researchers are eligible to use the facility. No charge is anticipated.

For access information contact: Dr. Clyde E. Connell, Head, Biology Department, Valdosta State College, Valdosta, Georgia 31601.

**FISHERIES RESEARCH PONDS**

**University of Southwestern Louisiana**
There are twenty-eight ponds (1/20 to 1/5 acres in size) used for research on polyculture of catfish and crayfish. Air conditioned hatchery building is supplied with both well water and pond water. There is a 2,000 gallon recirculating sea water system.

Eligibility to use the facility depends upon project merit. Financial charge is dependent on the nature of use.

For access information contact: Dr. M.A. Konikoff, Assistant Professor, Department of Biology, University of Southwestern Louisiana, Lafayette, Louisiana 70501.

**FRESH WATER LABORATORY**

**University of South Alabama**
About three acres located on an impoundment, Big Creek Lake, about 12 miles west of Mobile. The acreage includes a small block laboratory-maintenance building, a pier of about 100', and a raft-like work platform. There are no sleeping or kitchen facilities.

All faculty and students are eligible to use the facility. No financial charges are anticipated.

For access information contact: Dr. Robert Shipp, Department of Biological Sciences, University of South Alabama, Mobile, Alabama 36608.

**FREEZE-ETCH MACHINE**

**The University of Georgia**
The Bendix Balzer's Freeze-etch Machine makes replicas of frozen biological tissue for electron microscopy.

Faculty members and graduate students of University of Georgia and senior scientists throughout the region from other institutions are eligible to use the facility. A cost of $15.00 per run under the direction of University staff is anticipated.

For access information contact: Dr. W.J. Humphreys, Professor Zoology and Director, E.M. Laboratory, The University of Georgia, Athens, Georgia 30601.

**GULF COAST RESEARCH LABORATORY**

**Institutions of Higher Learning, Mississippi**
The laboratory is operated by Mississippi institutions of higher learning for study of marine biology. The facilities include seven modern

buildings and a small fleet of boats, ranging in size from 22' to 65'. Much of the work at the laboratory is directed toward environmental studies of the numerous marine organisms that live in surrounding waters.

Faculty members and students are eligible to use the facility. Arrangements will be worked out on an individual basis.

For access information contact: Dr. Harold Howse, Director, Gulf Coast Research Laboratory, Ocean Springs, Mississippi 39564.

**HERBARIUM**

**Georgia Southern College**
The Georgia Southern Herbarium, founded in 1956, now contains approximately 15,000 mounted vascular specimens emphasizing plants from Georgia Coast Plain habitats. It occupies approximately 1200 square feet in an air conditioned $3,000,000 biology building opened in 1969 on the Georgia Southern College campus.

Laboratory, office, herbarium space and facilities, and consultation privileges are available to qualified researchers, including graduate students wishing to study Coastal Plain life forms (especially parasitic forms), or plant and/or animal populations of the region. Facilities are available at minimal costs by individual arrangements. Exchange of herbarium specimens (reciprocal) or loans for study must be arranged by the curator.

For access information contact: Dr. John R. Bozeman, Curator, Georgia Southern College Herbarium, Georgia Southern College, Statesboro, Georgia 30458.

**HERBARIUM**

**Northeast Louisiana University**
A rapidly developing and expanding Herbarium in the Department of Biology of approximately 70,000 specimens of vascular plants. Collection consists primarily of plants of the Gulf South, but there are exchange programs with 80 other institutions throughout the United States and in foreign countries such as Canada, Malaysia, Japan and New Zealand.

Faculty, graduate and undergraduate students are eligible to use this facility. Reimbursements will be required for operating expense and expendable materials and supplies only.

For access information contact: Dr. Daniel E. Dupree, Dean, College of Pure and Applied Sciences, Northeast Louisiana University, Monroe, Lousiiana 71201.

**HERBARIUM**

**University of Texas**
The facility consists of a research collection of preserved botanical

specimens, the largest and most complete in the South with heavy emphasis on Mexico and other parts of Latin America.

Faculty and graduate students are eligible to use the facility. No charge is anticipated.

For access information contact: Dr. B.L. Turner, Director, BIO 311, University of Texas at Austin, Austin, Texas 78712.

### HUMAN NUTRITION RESEARCH LABORATORY

**Texas Woman's University**
The Nelda Childers Stark Laboratory is concerned with human nutrition, childhood, young adult and geriatric nutrition, assessment of nutritional status growth and maturation, plant protein nutrition, development and nutritional evaluation of food products.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dean of the Graduate School, Box 22479, TWU Station, Denton, Texas 76204.

### HUMAN PERFORMANCE LABORATORY

**Furman University**
Located in the Physical Education Department, the laboratory contains a Quinton treadmill; Avionics digital computer with heart rate and ST heart wave segment indicated; electronically controlled underwater weighing tank with computer recorder; remote control heart rate and oxygen intake indicator; Q2 analyzers; pursuit rotor calculators; 4 channel physiograph with overhead project attachment; and cassette video tape monitor for lab work.

Faculty and graduate students are eligible to use the facility.

For access information contact: Dr. Ruth Reid, Chairman, Health and Physical Education, Furman University, Greenville, South Carolina 29613.

### HUMAN PERFORMANCE LABORATORY

**University of South Carolina**
The laboratory is equipped to do research in the general area of exercise physiology and physical fitness. Equipment is available to study metabolic function, pulmonary function, cardiovascular function (resting and stress ECG, blood pressure, heart sound, and pulse wave), anthropometric variables, muscle action potentials, and thermoregulation. Bicycle ergometers and motor driver treadmills are available for exercise studies. The laboratory is used for instructional purposes, exercise physiology research, and an exercise service program for both normal and cardiac patients.

Faculty, graduate and undergraduate students are eligible to use the facility. Financial charges are contingent upon the nature of the project but generally are limited to expendables.

For access information contact: Dr. Steven N. Blair, Associate Professor and Director, Human Performance Laboratory, School of Health and Physical Education, University of South Carolina, Columbia, South Carolina 29208.

## HYPERBARIC FACILITY

**University of Texas Medical Branch**
This facility contains a man-rated double-lock hyperbaric chamber that is available and operational twenty-four hours a day, seven days a week, for the emergency treatment of diving accidents. Four teams of physicians and chamber operators rotate on a continuous call schedule for the treatment of air embolism, decompression sickness and other diseases that may require the use of a hyperbaric chamber. Gas gangrene is the most common disease not related to diving that is treated in a hyperbaric chamber. The main chamber and the secondary smaller chambers are also used for research studies in high pressure physiology. The medical treatment chamber can be pressurized to simulate a depth of 600 feet of sea water. The chamber can accommodate six people and breathing gases available are air, oxygen and helium-oxygen.

Arrangements can be made for the use of the facility with assistance of the professional staff.

For access information contact: Dr. Stewart Wolf, Director, Marine Biomedical Institute, 200 University Boulevard, Galveston, Texas 77550.

## ICHTHYOLOGICAL COLLECTION

**University of Alabama**
The facility consists of a collection of preserved fish specimens numbering approximately 800,000, in 35,000 lots, representing approximately 600 species from the United States, Atlantic, Gulf of Mexico, South and Central America and other countries. The collection is used for teaching and research and is available to qualified workers in ichthyology. Collections of reptiles, mammals, and birds are also available.

Faculty, graduate students, and qualified individuals are eligible to use the facility. There is no financial charge for loan requests.

For access information contact: Dr. Herbert Boschung, Box 1927, University of Alabama, University, Alabama 35486.

## INSTITUTE FOR CANCER RESEARCH

**Nova University**
The Leo Goodwin Institute includes unique immunology laboratory, germ-free animals and an electron micorscope.

Faculty and graduate students are eligible to use the facility. Costs will be worked out on an individual basis.

For access information contact: Dr. Abraham, S. Fischler, President, Nova University, 3301 College Avenue, Fort Lauderdale, Florida 33314.

**INSTITUTE FOR THE MEDICAL HUMANITIES**

**University of Texas Medical Branch**

The first medical school building in the State of Texas (1890) is being restored as the offices for the Institute. Associated with this Institute is the Southwest's largest collection of physical and literary resources pertaining to the History of Medicine. The collection of objects include microscopes, surgical instruments, x-ray equipment, and art objects pertaining to medicine. More than 20,000 volumes constitute the literary resources which include special collections in the history of psychiatry, forensic medicine, vaccination, surgery, and anatomy.

Faculty, graduate and undergraduate students are eligible to use the facilty.

For access information contact: Dr. Chester R. Burns, Director, History of Medicine Division, University of Texas Medical Branch, Galveston, Texas 77550.

**INSTITUTE OF DENTAL RESEARCH**

**The University of Alabama in Birmingham**

One of four in the United States. The Institute conducts basic research in connective tissues and in mineralization investigations on caries and of perodontal diseases, and is planning investigations of oral encogenesis. The faculty of the Institute has an active program in graduate and post-doctoral training. Present equipment includes a transmission electron microscope and scanning electron microscope and staff and equipment for biochemical and chromatographic studies of carbohydrates; micropolysaccharides and proteins, particularly collagen.

Knowledgeable faculty and students of co-investigator status are eligible to use the facilty. Conditions for using the facility will be arranged on an individual basis.

For access information contact: Dr. Harold M. Fullmer, Director, Institute of Dental Research, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

**INSTITUTE OF ENVIRONMENTAL HEALTH**

**University of Texas School of Public Health**

The facility is planned to provide a research opportunity in which persons from many different fields will devote themselves to the significant health related problems of environmental management. The particular emphasis is biological and socio-cultural so that this facility does not significantly replicate the resources already available that are primarily devoted to engineering concerns.

Faculty and graduate students are eligible to use the facility. No charge is anticipated.

For access information contact: Dr. Reuel A. Stallones, Dean, University of Texas School of Public Health, Post Office Box 20186, Houston, Texas 77025.

## INTERDISCIPLINARY RESEARCH LABORATORIES

**Tulane University**
The Tulane Riverside Research Laboratories at the 500-acre Hebert Center provide special facilities for advance research and graduate training in such areas as aerospace sciences, computer sciences, bioengineering environmental biology and developmental biology. Facilities include a Van de Graaff accelerator.

Facilities will be made available for faculty and graduate students engaged in related research. Specimens in Systematic and Environmental laboratories may be borrowed. Arrangements will be made on an individual basis.

For access information contact: Dr. David R. Deener, Provost and Dean of the Graduate School, Tulane University, New Orleans, Louisiana 70118.

## MEDICAL RESEARCH AND TRAINING CENTER

**Tulane University**
The Center is located at Cali, Colombia, on the Campus of Universidad del Valle, and operates under Tulane direction as a cooperative venture. Tulane faculty members who have worked at the Center include specialists in epidemiology, microbiology, parasitology, tropical medicine, psychiatry, sociology, anthropology, biostatistics, and civil engineering.

There is currently partial to full support for some researchers, while others come with support from their institution. The Center is able to bring in duty-free supplies for all researchers. The Center is primarily for health research personnel, but faculty members and graduate students from other areas may be accommodated.

For access information contact: Dr. Paul C. Beaver, Director, International Center for Medical Research and Training, Tulane Medical Center, 1430 Tulane Avenue, New Orleans, Louisiana 70112.

## INVERTEBRATE COLLECTIONS

**University of Southwestern Louisiana**
The facility consists of collections of invertebrates, catalogues, mainly marine mollusks and arthropods from Louisiana and Gulf of Mexico. It also includes a collection of Louisiana fresh-water mussels and crayfish and the Francis Theall shell collection with world wide representation of marine mollusks.

Qualified researchers and graduate students are eligible to use the facility.

For access information contact: Dr. H.D. Hoese, Associate Professor, Department of Biology, University of Southwestern Louisiana, Lafayette, Louisiana 70501.

## ISOLATION QUARANTINE GREENHOUSE

**University of Florida**
The facility is an isolation quarantine greenhouse to evaluate pathgenicity of exotic plant pathogens that attack aquatic weeds—the only such facility in the United State designes specifically for work with pathogens of this group of noxious plants. Culture of fungal and bacterial pathogens of foreign origin is also done in this facility.

Researchers who work with pathogens of aquatic plants following agreement between cooperators are eligible to use the facility.

For access information contact: Dr. L.H. Purdy, Chairman, Plant Pathology Department, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida 32611.

## MARINE BIOLOGICAL LABORATORY

**College of Charleston**
This 4,160 square foot facility is located on the water's edge near the entrance to Charleston harbor. The open ocean, the beaches, and sea islands are only two miles away and extensive exposed rock jetties on each side of the harbor provide unusual local habitat. The laboratory is located adjacent to the South Carolina Marine Resources Division Laboratories which has sophisticated analytical equipment, ships, boats, and docking facilities available on a cooperative basis.

Faculty, graduate and undergraduate students are eligible to use the facility. A nominal charge to use the facility will be negotiated on an individual project basis.

For access information contact: Dr. Norman Allison Chamberlain III, Director of Grice Marine Biological Laboratory, College of Charleston, Charleston, South Carolina 29401.

## MARINE BIOLOGICAL STATION

**University of Miami**
Pigeon Key is a small island, 3.5 acres in area, in the line of the lower Florida Keys lying midway between the Straits of Florida and the open Gulf of Mexico. It offers a location for tropical marine studies in one of the richest areas of coral growth in the continental United States. There is a general classroom building and laboratories. Holding tanks with running sea water are available. Accommodations are available in a small dormitory, three cottages with a capacity of 9 each, and one cottage with a capacity of 2.

Faculty, graduate and undergraduate students when accompanied by a faculty members are eligible to use the facility. Reservations must be made in advance in writing and are available on a first come-first

served basis for eligible groups or individuals throughout the year as scheduling permits. The charge will be $5 per day per person.

For access information contact: Dr. E.H. Man, Dean of Research Coordination, Post Office Box 8293, University of Miami, Coral Gables, Florida 33124.

## MARINE BIOLOGY LABORATORY

**Nicholls State University**
A two-story facility with laboratory, sleeping quarters for 16, located at the mouth of Bayou Lafourche and near the Gulf of Mexico. A boat slip with docks and small inside water craft is adjacent to Laboratory. Location and equipment focused on estaurine ecology and the development of shrimp and fish production (mariculture).

Faculty, and graduate students in the Marine Sciences are eligible to use the facility. Financial charges to be negotiated on an individual project basis.

For access information contact: Dr. Alva Harris, Director, Marine Biology Laboratory, University Station, Nicholls State University, Thibodaux, Louisiana 70301.

## MARINE BIOMEDICAL INSTITUTE

**University of Texas Medical Branch**
A limited number of laboratory rooms are under construction for the Marine Biomedical Institute. These rooms are equipped with essentials to provide a working environment for scientists.

The users will be expected to bring their own specialized equipment. Personnel are provided to assist with logistics and administrative problems during the planning and operational phases. Selected scientists whose work relates in some way to the Marine Biomedical Institute program are eligible to use the facility.

For access information contact: Dr. Stewart Wolf, Director, Marine Biomedical Institute, 200 University Boulevard, Galveston, Texas 77550.

## MARINE LABORATORY

**Florida State University**
The Ed Ball Marine Laboratory is located 50 miles southwest of Tallahassee on Gulf of Mexico. Facilities: laboratory with 16 separate laboratory rooms, dark room, and constant temperature room; classroom-office-library buildings; four dorms—total capacity—20 persons; shop buildings; dock capable of berthing 200' ship; 12' deep channel to open Gulf.

Faculty, graduate and undergraduate students are eligible to use the facilities of the laboratory. Only restriction is during the spring quar-

ter when full time class is conducted at the laboratory. A nominal charge will be made for use of boats.

For access information contact: Mr. George W. Flager, Administration Assistant, Florida State University, Tallahassee, Florida 32306.

### MARINE LABORATORY

**Duke University**
The Cooperative Undergraduate Program in Marine Sciences is scheduled for non-Duke students. There are dormitory accommodations for 100, collecting facilities ranging from 118 foot oceanographic vessel, EASTWARD, to individual skiffs. The laboratory is equipped with running seawater systems and equipment available for virtually all types of research.

For research purposes, graduate students and faculty from qualified institutions are eligible to do research within the estuarine, coastal, or oceanic environments. There will be a facility charge of $1.00 per day per student.

For access information contact: John D. Costlow, Director, Duke University Marine Laboratory, Beaufort, North Caolina 28516.

### MARINE LABORATORY

**University of Florida**
The Cornelius Vanderbilt Whitney Marine Laboratory is located on the east coast of Florida at Marineland. Facilities include seventeen modern research laboratories suitable for most kinds of studies related to marine conditions. The laboratory is new and well equipped. Housing accommodations are presently very limited.

Faculty, graduate students, and qualified investigators are eligible to use the facility. A small fee will be charged for the use of laboratory space.

For access information contact: Dr. Samuel Gurin, Director, C. V. Whitney Marine Laboratory, University of Florida, Route 1, Box 121, St. Augustine, Florida 32084.

### MARINE RESEARCH LABORATORY

**University of Southwestern Louisiana**
The facility is a marine laboratory located in low salinity coastal marshland, accessible only by boat. It is located in the State Game Refuge. Geese, ducks, nutria, muskrat abound. There is a 4,900 square foot building which sleeps 16 and has electricity, plumbing, heat, and cooking facilities.

Qualified individuals are eligible to use the facility. Cost will be dependent upon use of the facility.

For access information contact: Dr. D. Hoese, Department of Biology, University of Southwestern Louisiana, Lafayette, Louisiana 70501.

## MARINE SCIENCE CENTER

**East Carolina University**
East Carolina University in cooperation with North Carolina University at Chapel Hill operates a marine science center in Dare County, North Carolina. The center provides unique opportunity to *study* problems of the coastal environment. In addition to the educational and research aspects of the center, a comprehensive Sea Grant program to aid commercial fishermen has been operating since July, 1970.

For access information contact: Dr. James McGee, Director, Sea Grant Program, East Carolina University, Greenville, North Carolina 27834.

## MARINE SCIENCE—CONSORTIUM STATION

**West Virginia University**
Two Marine stations are available: one at Lewes, Delaware, and one at Wallops Island, Virginia. Research, oceanographic cruises, graduate, and undergraduate courses are available.

The facilities are available year round to qualified individuals. Use will be dependent upon on-going events at the stations. Cost will be negotiated.

For access information contact: Dr. E. C. Keller, Jr., Biology Department, West Virginia University, Morgantown, West Virginia 26506.

## MARINE SCIENCE FACILITY

**The University of Georgia**
Skidaway Institute of Oceanography has 700 acres at Skidaway Island on Georgia Coast for marine science development facilities.

Institutions, faculty members, and graduate students supervised by faculty are eligible to use the facility. If the user is not supported by a contract or grant, there may be minimal or no charge.

For access information contact: Dr. David Menzel, Director, Skidaway Institute of Oceanography, P.O. Box 13687, Savannah, Georgia 31406.

## MARINE SCIENCE INSTITUTE

**University of South Florida**
The Institute has docking facilities, maintenance facilities for oceanographic vessels, as well as several small craft up to 22'.

There is unused docking space for larger vessels (65' to 200') that can be used by other oceanographic institutions. There is no unused space for smaller vessels (under 50'). There will be no charge for use of these docking facilities.

For access information contact: Dr. Harold J. Humm, Chairman, Department of Marine Science, University of South Florida, St. Petersburg, Florida 33701.

**MAXILLOFACIAL PROSTHETICS TREATMENT AND TRAINING CENTER**

**The University of Alabama in Birmingham**
Serves as a treatment facility for reconstruction of intra-oral and extra-oral defects resulting from congenital or acquired causes. The Center functions also as a training resource for professional and ancillary personnel. An intensive research program in materials is conducted within the facility.

The Center has one full time resident trainee. Professional visitors will be accommodated for varying time periods to share experience of learning techniques which are utilized at the Center.

For access information contact: Dr. Dwight J. Castleberry, Director, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

**MEDICAL CENTER/APPALACHIAN LABORATORY FOR OCCUPATIONAL RESPIRATORY DISEASES**

**West Virginia University**
Program of teaching and research for occupational diseases with special emphasis of miner's respiratory diseases.

Clinicians, students and other researchers in basic life sciences are eligible to use the facility. Conditions for using the facility will be negotiated.

For access information contact: Dr. Charles Andrews, Provost Health Sciences, West Virginia University, Morgantown, West Virginia 26506.

**MENTAL RETARDATION RESEARCH AND TRAINING CENTER**

**Texas Tech University**
The facility is an interdepartmental center which develops and implements applied research which will lead to more effective and efficient habilitation of the mentally retarded and provides interdisciplinary academic and continuing education programs for personnel involved in rehabilitation programs.

Collaborative research studies are being carried out in a five-state region.

For access information contact: Dr. Gerard J. Bensberg, Director, Research and Training Center, Box 4510, Texas Tech University, Lubbock, Texas 79409.

**MUSEUM OF ZOOLOGY**

**Northeast Louisiana University**
Extensive collections of vertebrates as follows: 25,200 lots, containing over 1,000,000 specimens representing 740 species of fresh-water fishes of North America, including several series of type specimens; 45,000 specimens of amphibians and reptiles of North American rep-

resenting over 700 species; 8,000 exotic specimens of amphibians and reptiles from Asia, Africa, Europe and South America.

Faculty, graduate and undergraduate students are eligible to use the facility. Reimbursement will be required for operating expense and expendable materials and supplies only.

For access information contact: Dr. Daniel E. Dupree, Dean, College of Pure and Applied Sciences, Northeast Louisiana University, Monroe, Louisiana 71201.

## NEUROPHYSIOLOGY OF VISION CLINIC

**Southern College of Optometry**
Electrical activity from the eye and brain are independently recorded in response to varying visual stimulation through varying ophthalmic lens systems to diagnose the integrity of the retinal and cortical components of the visual system. The visual evoked response (VER), electroretinography (ERG), electrooculography (EOG), dark adaptometry, laser refraction and conventional acuity measurement techniques are used in combination in the total assessment.

Visual science faculty and graduate students may request briefings and/or negotiate for limited usage at $5.00 per hour minimum use charge.

For access information contact: Dr. Richard H. Dohrn, Southern College of Optometry, Memphis, Tennessee 38104.

## NEUROSCIENCES FACILITIES

**The University of Alabama in Birmingham**
An interdisciplinary research and teaching group with 18,000 square feet of laboratories equipped to carry out experiments ranging from biophysical studies of artificial membranes to sleep-in human subjects.

Graduate and postdoctoral students interested in basic research in the neurosciences are eligible to use the facility. Each sharing instance will be worked out individually.

For access information contact: Dr. G. Vernon Pegram, Director of the Neurosciences Program, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

## NEWBORN CENTER

**University of Mississippi Medical Center**
The facility is designed in the round with 82 bassinetts;48 for the newborn; 34 for the various levels of intensive care. The center serves as the training site for all levels of students and for physician-nurse teams from the state and region. There is on-site review of nursery facilities in local hospitals and follow-up consultations are provided requesting hospitals. Follow-up physician-nurse consultation helps trainee teams plan and implement desired changes in local facilities.

Graduate students as well as practicing physicians and nurses are eligible to use the facility.

For access information contact: Dr. Alfred W. Brann, Jr., University Medical Center, 2500 North State Street, Jackson, Mississippi 39216.

**PHYTOTRON**

**Duke University**
The phytotron is a laboratory for study of plant growth in a wide range of environments controlled with respect to temperature, humidity, photoperiod, and supply of water and nutrients. It consists of a building containing 34,000 square feet of floor space with offices, laboratories, and mechanical rooms. There are six greenhouses, 20' x 24', and forty growth chambers ranging in size from 3' x 4' to 8' x 12'. Temperatures from 10° to 40°C and light intensities of 4,500 ft. candles are routinely available.

Faculty, graduate students, and plant scientists from other laboratories are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Henry Hellmers, Department of Botany, Duke University, Durham, North Carolina 27706.

**PLANT ENVIRONMENT LABORATORIES**

**North Carolina State University**
The Southeastern Plant Environment Laboratories are especially designed for research dealing with the response of biological organisms to their environment; the high degree of control makes it possible to duplicate any climate from tropical rain forest to arid desert arctic cold.

Scientific investigations are selected on a merit basis.

For access information contact: Dr. R. J. Downs, Director, Southeastern Plant Environment Laboratories, North Carolina Agricultural Experiment Station, North Carolina State University, Raleigh, North Carolina 27607.

**PLANT GNOTOBIOLOGY LABORATORY**

**Virginia Polytechnic Institute and State University**
The facility houses two lighted growth rooms containing six plastic isolator chambers each for axenic or gnotobiotic growth of plants and conducting experiments requiring such controlled environments. Ancillary facilities include preparation and autoclave laboratory, laboratories for analyzing root exudates and for servicing the growth rooms. Procedures for culturing a number of crop plants axenically have been developed. The facility is especially useful for physiological studies of higher plants in the absence of other organisms and for pathological studies of host-pathogen interactions in the absence of other organisms. One to several biotes can be introduced and chemical interactions determined.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Maynard Hale, Associate Professor, Gnotobiology Laboratory Coordinator, Department of Plant Pathology and Physiology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## POISON CONTROL CENTER

**Duke University**
The second poison control center in the United States serves the Southeast as an information and treatment center. It treats or directs treatment of over 1,000 poisoned victims a year. The center's facility is in the emergency area of Duke Hospital and its services are available 24 hours a day, seven days a week.

Graduate and undergraduate students are eligible to use the facility.

For access information contact: Dr. Jay M. Arena, Director, Poison Control Center, Duke University, Box 3024, Durham, North Carolina 27710.

## PRIMATE FACILITY

**Duke University**
The facility consists of a unique collection of prosimian primates used for behavioral and genetic research.

Faculty, graduate and undergraduate students are eligible to use the facility. Costs are negotiable.

For access information contact: Dr. J.A. Bergeron, Managing Director, Box 2909, Duke University Medical Center, Durham, North Carolina 27710.

## REHABILITATION CENTER

**The University of Alabama in Birmingham**
The Spain Rehabilitation Center is a 76-bed comprehensive rehabilitation facility, specializing in spinal cord injury, clinical services, and related research such as in neurogenic bladder osteoporosis, and psychosocial problems of the seriously disabled. The Center houses a regional Model Spinal Cord Injury Center and a Rehabilitation Research and Training Center and maintains a laboratory with controlled environment chamber for the study of temperature control mechanisms to man.

Residents in Rehabilitation Medicine, fellows interested in cord injury research, and physiologists interested in temperature control mechanisms are eligible to use the facility. Conditions for using the facility will be arranged on an individual basis.

For access information contact: Dr. John M. Miller, III, Director, Spain Rehabilitation Center, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

## RESEARCH VESSELS AND OCEANOGRAPHIC EQUIPMENT

**Florida Institute of Technology**

Sea-Hunter—65' wooden shrimper type, single 150 hp Caterpillar diesel, accomodates 12. Equipment: Electric/hydraulic "Hydro-Products" oceanographic winch, hydraulically operated A-frame, wet laboratory—dry laboratory, Loran-A—Lorac precise navigational system, Echo-sounder. Based at FIT facility, Marine Science Center, Fort Pierce, Florida.

Faculty members, graduate and undergraduate students are eligible to use the facility. Boat may be used on a minimum costs basis (no overhead or other indirect costs involved). This is approximately $200 per day for one-day cruises and $500 per day for continuous (overnight) cruising.

For access information contact: Dr. E.J. Kalajian, Oceanography Department, Florida Institute of Technology, Melbourne, Florida 39201.

## SICKLE CELL ANEMIA CENTER

**Medical College of Georgia**

A federally supported Center which concerns itself with a study of various aspects of sickle cell anemia and related disorders, namely (a) education at the high school, college, graduate school, medical student and post graduate levels; (b) screening of (black) population for abnormal hemoglobins; (c) (genetic) counseling and social service aspects; (d) out- and in-patient clinical services; (e) clinical research; (f) basic research. The Center operates through cooperative efforts of members from different departments; medicine, pathology, pediatrics, biochemistry, and community medicine.

Faculty members and graduate students in biological and social sciences (social work, particularly) are eligible to use the facility. No special conditions for using the facility, except that financial support cannot be given.

For access information contact: Dr. Titus H.J. Huisman, Director, Comprehensive Sickle Cell Center, Medical College of Georgia, Augusta, Georgia 30902.

## SKELETAL COLLECTION

**University of Tennessee**

The human bone collection consists of approximately 6,000 individuals, with about one half from the southeast. The principle use is for graduate research in anthropology, dentistry, medicine, and/or zooarcheology.

Faculty and graduate students are eligible to use the facility.

For access information contact: Dr. W.A. Bass, Head, Department of Anthropology, University of Tennessee, Knoxville, Tennessee 37916.

## TELETYPE CHEMICAL TYPEWRITER

**University of Tennessee Medical Units**
The facility is used for input of chemical structures on paper tape. It could be used in developing computerized libraries of chemical structures.

For access information contact: Dr. William P. Purcell, Professor and chairman, Department of Molecular and Quantum Biology, University of Tennessee Medical Units, Memphis, Tennessee 38103.

## TOXICOLOGY & CRIMINOLOGY LABORATORIES

**Auburn University**
The laboratories of the Alabama State Department of Toxicology & Criminology provide unique learning resources for graduate students in forensic toxicology.

Graduate students are eligible to use this facility. Thorough background investigation will be made on each applicant due to nature of facilities, the operation, and other work in progress at all times.

For access information contact: Dr. Sam Coker, School of Pharmacy, Auburn University, Auburn, Alabama 36830.

## ULTRAVIOLET GRATING MONOCHROMATOR

**University of Tennessee**
The monochromator has a high intensity radiation source and microbeam irradiation system, including an adapted microscope, ultraflaur objective, and photomultiplier makes it possible to deliver a known dose of radiation of a desired wavelength to any selected small spot in a cell.

Faculty members and graduate students are eligible to use the facility.

For access information contact: Dr. J. Gordon Carlson, Department of Zoology, University of Tennessee, Knoxville, Tennessee 37916.

## VERTEBRATE COLLECTION

**Midwestern University**
The facility includes approximately 15,000 fresh-water and marine fishes, amphibians, reptiles and birds; the Recent Mammal Collection of more than 10,000 skins and skeletons of the kinds of mammals that live today; and the Fossil Vertebrate Collection of some 15,000 fossils of vertebrate animals that lived 10,000 or more years ago. The Fossil Vertebrate Collection is especially rich in late Tertiary and Pleistocene mammals.

Available to qualified scientists and graduate students from other institutions; specimens may be loaned to other institutions. Fragile specimens or large amounts of material will not be sent on loan but must be studied in collection.

For access information contact: Dr. Walter W. Dalquest, Department of Biology, Midwestern University, Wichita Falls, Texas 76308.

### VISION THERAPY CLINIC

**University of Houston**
A clinic which provides diagnoses and therapy for individuals with learning disabilities associated with vision and visual perceptual motor disfunctions.

Faculty members, graduate students, and undergraduate students from the fields of optometry, education, speech and hearing, psychology, and medicine are eligible to use the facility on a pre-arranged basis.

For access information contact: Dr. J. Floyd Williams, Chief, Vision Therapy Clinic, College of Optometry, University of Houston, Houston, Texas 77004.

### WENNER-GREN RESEARCH LABORATORY

**University of Kentucky**
The Wenner-Gren Laboratory is a center for biomedical engineering research with unique facilities for investigating behavioral, physiological and mechanical aspects of environmental stress. Chronic stress facilities include vibration, acceleration (centrifuges) and pressure.

Facility will be shared with faculty and students from other universities on the basis of availability. The laboratory is self-supporting; charges will be based on actual cost reimbursement.

For access information contact: Dr. J.F. Lafferty, Director, Wenner-Gren Research Laboratory, University of Kentucky, Lexington, Kentucky 40506.

### WHOLE BODY COUNTER

**University of Florida**
Large chamber designed to measure human or animal body radiation. Whole-body counting equipment includes a 4 pi liquid scintillation whole-body counter and a partially shadow-shielded 4" x 9" Nal crystal counter. The output from the 4 pi counter is analyzed with either a 400-Multichannel analyzer or a recently updated dual single-channel analyzer system. Output from the crystal is analyzed with a 400-Multichannel analyzer.

Faculty members and graduate students are eligible to use the facility. Tours of the facility and instruction in whole-body counting techniques, uses, and advantages can be arranged for upper division undergraduate students. A charge will be made for scheduled research projects. The charge will depend on the number and type of radiation measurements to be made.

For access information contact: Dr. Billy G. Dunavant, Director, Radiation Control and Radiological Services, 317 Nuclear Sciences Center, University of Florida, Gainesville, Florida 32601.

## WHOLE BODY COUNTER

**Vanderbilt University**

The facility consists of a 6' x 6' x 8' room shielded by low radioactivity content steel with dual-opposed 5" x 4" sodium iodide gamma ray detectors. The scanning detector system is computer-controlled and is used for counting low levels of radioactivity (including naturally occurring 40K) as well as mapping the regional distribution of high levels of radio-activity using lead collimators of various designs. The facility is primarily used for diagnostic nuclear medicine studies and quantitative assays or organ content for radiation dosimetry evaluations or calculations.

Faculty and graduate students are eligible to use the facility. Local staff will assist in the study design data collection and analysis as needed. Arrangements for use of the facility are negotiable.

For access information contact: Dr. A. B. Brill, Division of Nuclear Medicine, School of Medicine, Vanderbilt University, Nashville, Tennessee 37240.

## YERKES REGIONAL PRIMATE RESEARCH CENTER

**Emory University**

The Center is devoted to the study of and research with non-human primates, especially the great apes.

Individuals who have research projects using non-human primates or would like to study these animals will be welcome at the Center for varying periods of time. No charges anticipated.

For access information contact: Dr. Geoffrey H. Bourne, Director, Yerkes Regional Primate Center, Emory University, Atlanta, Georgia 30322.

### CENSUS TAPE DATA BANK

**University of Miami**
The facility consists of a UNIVAC 1106 which is primarily for administrative, research and student usage as well as private industry by special arrangements with the Director of the Computer Center. It has a capacity 262,000 word core storage, disc, tape high speed card reader, card punch, and high and low speed communications capacity.

Faculty and students are eligible to use the facility.

For access information contact: Dr. Jool Samuel, Director, Computer Center, University of Miami, Coral Gables, Florida 33124.

### CENTER FOR TEXTUAL AND EDITORIAL STUDIES

**University of Virginia**
Subjects of study include paleography and diplomatics, bibliography and archival procedures, preparation of critical editions of literary works, printing and photographic practices, and legal and ethical questions related to texts and publication.

Individuals in the fields of history, English, classics and related areas are eligible to use the facility. There is no charge.

For access information contact: Dr. George Reese, Director, 36 Alderman Library, University of Virginia, Charlottesville, Virginia 22903.

### CENTER FOR TEXTUAL STUDIES

**University of South Carolina**
This is a study center which has a Hinman collating machine, a Lindstrand Comparator, two microfilm readers, and two separate rooms for sight collations and other textual work. The center is used primarily for textual work on the works of W. G. Simms, in preparation of the Centennial Simms Edition. However, it is frequently used for textual work on other authors.

The facility could be shared for small projects.

For access information contact: Dr. Keen Butterworth, English Department, University of South Carolina, Columbia, South Carolina 29208.

### COMPUTER GRAPHICS SECTION

**Louisiana State University**
This is a complete computer graphics section containing a Batch Terminal to the LSU IBM 360-65 computer; 1 wang, input and output, 9 track tape deck; 650 cps card reader; 650 1pm printer; Beehive CRT monitor; a super 1200 nova mini computer and a 40" x 60" Milgo DPS 7 flat bed plotter. The primary function of this center is to train graduate and undergraduate students in the School of Geoscience in the use of computer graphics.

Interested individuals are eligible to use the facility after first obtain-

ing permission from the Director of the School of Geoscience. There will be a charge of $50 per hour for the plotter, $10 per hour for the programmer, and $20 per hour for a machine operator.

For access information contact: Director, School of Geoscience, Louisiana State University, Baton Rouge, Louisiana 70803.

## EDITORIAL OFFICES

**University of South Carolina**

The Yearbook of American Bibliographical and Textual Studies is available for advanced research and teaching. The facilities include a Hinman Collator, Lindstrand Comparator, microfilm reader, layout and design facilities and a laboratory now being supplied with eighteenth and nineteenth century printing equipment. Projects prepared in the editorial offices number Calendars of American Literary Manuscripts (CALM: published by the Ohio State University Press) and The Centenary Edition of the Works of Frank Norris.

Faculty, students, and qualified non-academics are eligible to use the facility.

For access information contact: Dr. Joseph Katz, Director, Proof Editorial Offices, University of South Carolina, Columbia, South Carolina 29206.

## INFORMATION DISSEMINATION CENTER

**The University of Georgia**

The Center provides computer-assisted searches of bibliographic data bases in the areas of chemistry, biology, agriculture, phychology, sociology, music, education, engineering, physics, biochemistry, nuclear science, toxicology, geology, and government research reports (multidisciplinary). Current awareness and retrospective searches are available. The current awareness searches provide up to date bibliographies. The retrospective searches are conducted on the accumulated tape files.

Faculty members, graduate students and research staff are eligible to submit searches on a cost-recovery basis.

For access information contact: Dr. John S. Edwards, Georgia Information Dissemination Center, Computer Center, University of Georgia, Athens, Georgia 30601.

## REGIONAL INFORMATION AND COMMUNICATION EXCHANGE

**Rice University**

The Regional Information and Communication Exchange (RICE) is a complete scientific and technical information center to serve the information needs of business and industry.

All departments and units of universities as well as all faculty and students are eligible to use the facility. Most services of the Information Exchange are available on a fee basis only.

For access information contact: Director, Regional Information and Communication Exchange, c/o Fondren Library, Rice University, Houston, Texas 77001.

### SIGNAL PROCESSING COMPUTER LABORATORY

**North Carolina State University**
Signal Processing Computer Laboratory with computer capable of analyzing speech in a single dimension, pictures in two dimensions, and provides graphical displays of data. This computer is also capable of color graphics.

Any qualified person may use the facility. Conditions and charges will depend on work to be done.

For access information contact: Director, Engineering Research Services Division, 2158 Burlington Engineering Laboratories Building, North Carolina State University, Raleigh, North Carolina 27607.

### TRIANGLE UNIVERSITIES COMPUTATION CENTER

**University of North Carolina at Chapel Hill**
Triangle Universities Computation Center is essentially a centralized, homogeneous network comprising a central service node (IBM 370/165), three primary job source nodes and 23 secondary job source nodes and about 125 tertiary job source nodes. Triangle Universities Computation Center was established in 1965 as a non-profit corporation by three major universities—University of North Carolina at Chapel Hill, North Carolina State University, and Duke University.

Triangle Universities Computation Center supports educational, research, and administrative computing requirements at the three universities, and also at 50 smaller institutions in the state and several research laboratories by means of multi-speed communications and computer terminal facilities. Low rates for using the facility will be extended to educational institutions.

For access information contact: Dr. Leland Williams, President & Director, Triangle Universities Computation Center, P.O. Box 12076, Research Triangle Park, North Carolina 27709.

### WESTERN INFORMATION NETWORK ASSOCIATION

**Texas Tech University**
The Western Information Network, an agency of the State of Texas, is an association of 18 institutions of higher education in the West Texas area. A full color TV recording studio is available for lecture and laboratory demonstration taping. Courses are offered in requested areas via video tape. Plans call for a microwave network to tie all 18 institutions together.

Faculty members are eligible to use the facility. The facility is designed to provide regional interchange of information. Charges are

nominal for studio usage plus typical tape cassetts charges of approximately $25 for one hour cassetts.

For access information contact: Dr. John R. Bradford, Director, Western Information Network, Post Office Box 4200, Lubbock, Texas 79409.

## ACOUSTICS FACILITY

**Georgia Institute of Technology**
The facility contains a variety of impedance tube setups capable of measuring unknown impedances in the presence of a one-dimensional steady flow and three-, two-, or one-dimensional oscillations. The largest impedance tube has a twelve inch inside diameter. These impedance tubes have been modified to obtain the acoustic damping characteristics of nozzles, mufflers and acoustic levers in the presence of a mean flow. The facility has a 3000 psia, 500 cubic feet air supply which can provide an air flow of 28,000 SCFM for testing. A high speed digital data acquisition system with extensive and versatile on line data reduction program is also available.

For access information contact: Dr. Ben T. Zinn, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## ACOUSTIC TEST FACILITIES

**Florida Atlantic University**
The acoustic test tank is lined for acoustic testing, hydrophone and transducer calibration. It is insulurate lined, relatively anechoic to about 10 to 15 kh. It works fairly well at even lower frequencies. An anechoic chamber for testing in air is also available.

The facility is available when it is not being used for teaching.

For access information contact: Dr. J. Blaine Davidson, Department of Ocean Engineering, Florida Atlantic University, Boca Raton, Florida 33432.

## AIR POLLUTION MODELING FACILITY

**Clemson University**
Thermocouple and anemometer instrumentation has been assembled in conjunction with a 16' x 20' x 5' modeling chamber for use in pollutant dispersion studies. Source simulation is via thermal transport at variable locations.

Request from qualified researchers to use the facility will be considered. Arrangements will be made on an individual basis.

For access information contact: Dr. J. C. Hester, Department of Mechanical Engineering, Clemson University, Clemson, South Carolina 29631.

## ANECHOIC CHAMBER

**University of Houston**
Uses of this room include calibration of microphones and sound sources, studies of directivity, machinery noise, speech and hearing, and architectural modeling. This program is part of the overall academic interest in acoustics which also features studies and research in underwater acoustics, ultrasonics, nonlinear and random vibration.



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Faculty and graduate students are eligible to use the facility. Presently, there is a charge of $150/day for use by outside concerns. If, however, other institutions make their facilities available free-of-charge, the University of Houston could reciprocate.

For access information contact: Dr. Robert D. Finch, Department of Mechanical Engineering, College of Engineering, University of Houston, Houston, Texas 77004.

## ANECHOIC CHAMBER FOR COMBUSTION NOISE STUDIES

**Georgia Institute of Technology**

The facility consists of an anechoic chamber of 12' x 12' x 6' working section equipped with fuel and air flow systems for combustion studies interior to the chamber. It contains associated recording equipment and spectral analysis equipment and has radical radiation measuring devices.

Faculty, graduate students, and qualified researchers are eligible to use the facility.

For access information contact: Dr. W. C. Strahle, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## ANIMAL EXPERIMENTAL RESEARCH LABORATORY

**University of Miami**

The laboratory contains 1,000 square feet for the teaching of experimental surgery and conducting animal research for biomedical engineering. The facility is located at the School of Medicine and contains operating tables, anesthesia equipment, measuring equipment for ECG, blood pressure, blood flow, electrosurgery. Facilities are available to provide implants such as artificial hearts, artificial heart valves, prosthetic devices, etc. Three animal stages are available. There is room for ten personnel.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Jacob Kline, Director, Biomedical Engineering, Post Office Box 8294, University of Miami, Coral Gables, Florida 33124.

## BENEFICIATION LABORATORY

**Virginia Polytechnic Institute and State University**

The laboratory can crush, grind and separate a wide variety of minerals. There are two other institutions which have parallel laboratories in Southeastern United States.

The facility is available to faculty, graduate and undergraduate students who are interested in areas of study involving mineral separation.

For access information contact: Dr. William E. Foreman, Department of Mining Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## BIOENGINEERING LABORATORIES

**Georgia Institute of Technology**
The facility contains the following laboratories: (1) Bioacoustics Laboratory—1148 soft embracing 8' x 12' x 10', containing a high acoustically and electrically shielded test chamber for acquisition and processing of data on auditory system performance in acute animal experimentation; and (2) Human Locomotor Engineering Laboratory—1148 square feet, including a 30 foot walkpath with an overhead cable system connecting subject to recording station; footswitch signals and several electronyography channels are available. Kinesiological data can be acquired photographically and subsequently processed by computer.

Faculty, graduate and undergraduate students are eligible to use the facility.

For access information contact: Dr. Morris Milner, School of Electrical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## BIOMECHANICS LABORATORY/CARDIAC RESEARCH LABORATORY

**Georgia Institute of Technology**
The facility is used for simulating blood flow and in studies of blood flow in larger vessels. It is concerned with measurements of turbulence engendered by pathological states. There is a research laboratory for animal experiments involving studies of blood flow in vivo in canines as well as a fully equipped operating room.

Faculty, graduate and selected undergraduates students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Don P. Giddens, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## BLOWOUT PREVENTION SCHOOL

**Louisiana State University**
A depleted oil well has been converted to a blowout prevention training well. A new string of 5-1/2" casing is set at 6,000' with concentric strings of 2-7/8" tubing and a 1" nitrogen injection line to total depth. The 1" x 2-7/8" annulus serves to stimulate the drill pipe, and bubble is circulated to the surface in the conventional manner. Surface facilities consist of one hand adjustable and four remote chokes along with mud tanks and pumps. In addition, the well is equipped with both annular and ram type blowout preventers and an accumulator.

Faculty, graduate students and industry or government representatives are eligible to use the facility. The well may be used on an

available basis if adequate insurance arrangements have been made, if the operation of the facility is at your own risk, and if an agreement to repair or replace equipment, excepting normal wear, has been made.

For access information contact: Mr. Bill Hise, Department of Petroleum Engineering, 103C Geology Building, Louisiana State University, Baton Rouge, Louisiana 70803.

## CERAMIC ENGINEERING LABORATORY

**Virginia Polytechnic Institute and State University**
The laboratory measures electrical properties of ceramic and metallic materials, including dielectric properties, electrical conductivity, and hall effect with simultaneous excitation and measurement of fluorescent spectra. This includes equipment for melting of chalcogenide glasses and vacuum deposition of thin films by RF sputtering and thermal evaporation.

The facility may be used by faculty, graduate and undergraduate students in conducting ceramic and metallurgical research.

For access information contact: Dr. W. C. Hackler, Division of Metallurgical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## COASTAL-HARBOR MODEL LABORATORY

**University of Florida**
An extensive open area equipped to measure wave and flood effects on inlets, harbors, etc.

Faculty members, graduate students, and research staff are eligible to use the facility. Facility is available for use provided there is no conflict with inhouse work. Technical staff is provided upon request if not committed to other activities. The charge depends on use. Cost estimates: facility charge, $50.00/day; technical staff, $100.00/man-day.

For access information contact: Dr. O. H. Shemdin, Coastal and Oceanographic Engineering Laboratory, University of Florida, Gainesville, Florida 32601.

## CORROSION LABORATORY

**Georgia Institute of Technology**
This is a complete laboratory for corrosion studies of metals and alloys. Included are several potentials, atomic spectra unit for ultra analysis of solids and solution, stress corrosion and other apparatus.

Faculty and graduate students are eligible to use the facility. There will be a financial charge due to staff time and costs.

For access information contact: Dr. Robert F. Hochman, Associate Director, Chemical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## ELECTRIC CAR LABORATORY

**Georgia Institute of Technology**
The laboratory has the facilities for motor testing, controlled design, battery recharging, and machine shop work. Adequate space is available for the construction of electric vehicles from the ground up or for the modification of stock cars for electric drive.

No charge is anticipated.

For access information contact: Dr. W. Marshall Leach, School of Electrical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## ELECTRON MICROSCOPE

**University of Virginia**
The high voltage transmission electron microscope operates at voltages up to 500 kV. It is capable of examining thick specimens (e.g. 0.5-lu biological samples, 1-2 u samples of Al, etc.). It has stereo micrographs, double tilting, tensile-heating stages, high resolution selected area diffraction.

Faculty and graduate students are eligible to use the facility. There is a basic charge to cover the cost of operation of the equipment. A free demonstration of the capabilities of the facility is available to interested scientists.

For access information contact: Dr. Kenneth R. Lawless, Department of Materials Science, School of Engineering, A-2 Thornton Hall, University of Virginia, Charlottesville, Virginia 22903.

## ELECTRON MICROSCOPE

**Virginia Polytechnic Institute and State University**
The Seimens Elmiskop IA Electron Microscope is used for the transmission electron studies of crystals and related diffraction studies at 100 kv. It is Swann bi-axial tilt staged. Hot and cold stages and specimen preparation equipment is also available.

Faculty, graduate students and undergraduate students may utilize this equipment for instructional and research purposes.

For access information contact: Dr. Jack L. Lytton, Department of Metallurgical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## ELECTROSTATIC AND FRICTIONAL BEHAVIOR FACILITY

**North Carolina State University**
The apparatus generates and measures the electrostatic and frictional behavior characteristics of textile yarns at controlled speeds and environmental conditions.

Qualified researchers are eligible to use the facility. Operating costs will range from $100-$200 per day depending on sample.

For access information contact: Dr. M. R. Shaw, Assistant Dean for Research, Textiles, 108 Nelson, North Carolina State University, Raleigh, North Carolina 27607.

## EXHAUST EMISSION AND AIR POLLUTION MEASUREMENT LABORATORY

**University of Miami**

The facility includes a Beckman model 400 flame ionization detector for measuring hydrocarbons, a Beckman model 315B non dispersive infrared carbon monoside analyzer (stacked cell arrangement 0-0.3%, 0-1.2%, 0-3% and 0-12% full scale ranges), a Beckman OM-11 polarographic oxygen analyzer and a thermoelectron model 10A chemiluminescent nitric oxide analyzer. All instruments are housed in an exhaust gas conditioning console. Also housed in the laboratory are various engine dynamometers and a Clayton Series C-200 chassis dynamometer thus allowing for emission measurements during engine dynamometer and in vehicle simulated road load condition testing.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Robert R. Adt, Jr., Director, Exhaust Emission and Air Pollution Measurement Laboratory, School of Engineering and Environmental Design, University of Miami, Coral Gables, Florida 33124.

## EXPERIMENTAL STRESS ANALYSIS LABORATORY

**Auburn University**

The laboratory is equipped to study the interrelationship between scattered light photoelasticity and holography. Moreover, it is now being prepared for research in acoustical holography. Static and dynamic stresses both in the surface and inside bodies may now be measured in this laboratory using scattered light and holographic techniques.

Faculty members, graduate students, and advanced undergraduates are eligible to use the facility. There will be no charge for using the facility but users will be expected to pay for expendables.

For access information contact: Dr. W. F. Swinson, Alumni Professor of Mechanical Engineering, Department of Mechanical Engineering, Auburn University, Auburn, Alabama 36830.

## FIELD ION AND FIELD EMISSION LABORATORIES

**Georgia Institute of Technology**

The laboratories contain systems for study of the ultra structure (atomic resolution - 1 x 10 magnification) and work function of metals and alloys.

Faculty and graduate students are eligible to use the facility. There will be a financial charge due to equipment operational cost.

For access information contact: Dr. Robert F. Hochman, Associate Director, Chemical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

**FIRE RESEARCH FACILITY**

**Georgia Institute of Technology**
The facility is designed to investigate the properties of the combustion products (particulate matter and gasses) formed when materials are burned under a variety of environmental conditions. The temperature of the surrounding gases can be varied up to 1200°F. The generated combustion products are analyzed by a gas chromatograph-mass spertrometer-computer system and particle size analyzers to determine chemical and physical composition of the combusion gases and smoke particles. An in situ laser technique is being developed to measure mean particle size, particle refractive index and particle concentration.

For access information contact: Dr. Ben T. Zinn, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

**FLIGHT RESEARCH LABORATORY**

**Mississippi State University**
The Raspet Flight Research Laboratory is complete with housing, construction, engine maintenance, and fiberglass facilities in the area of low-speed aerodynamics. The laboratory consists of approximately 20 research aircraft ranging from sailplanes to twin-engine C-45 type airplanes. A research vehicle, designated the XV-11A—a high performance VTOL airplane constructed entirely of fiberglass—is available as the testbed for laminar flow studies.

Faculty members and graduate students are eligible to use the facility. Costs will be determined on an individual basis.

For access information contact: Dr. Charles B. Cliett, Head, Department of Aerophysics and Aerospace Engineering, P.O. Drawer A, Mississippi State University, State College, Mississippi 39762.

**HIGH PRESSURE-HIGH TEMPERATURE LABORATORY**

**Georgia Institute of Technology**
The two high pressure facilities are available for research at pressures up to 100 atm. Unique features include steel pressure vessels with large initial volume (approximately $2 \times 10^4$ $cm^3$ each). Internal water cooling of pressurized systems is possible. There is a closed cooling water loop consisting of pump (20 gal./min.), heat exchanger (300 kw) and pressure equalization chamber ($\Delta p$ between cooling water and pressurized gas on vessel smaller than 10 atm). DC power capability of 1.5 MW and spectroscopic facilities are available. This facility is particularly well suited for high pressure arc research.

Faculty and graduate students are eligible to use the facility. Cost sharing of High Pressure Specialist will be required.

For access information contact: Dr. Stothe P. Kezios, Director, School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## HIGH REYNOLDS NUMBER FACILITY

**Auburn University**
Under development is a Ludwig High Reynolds Number Facility that will permit the testing of modules under test conditions dynamically similar to those of actual flight at high Reynolds numbers. The facility will also be used to study basic flow structure for numerous research programs.

Faculty members, graduate students, and upper level undergraduate students are eligible to use the facility. The financial charges will be negotiated and based on nature and duration of tests.

For access information contact: Dr. Kenneth E. Harwell, Aerospace Engineering, Auburn University, Auburn, Alabama 36830.

## HIGH TEMPERATURE AND THERMAL RADIATION

**University of Kentucky**
The laboratory has the capabilities for direction reflectance measurements from 0.35 to 50 micrometers and directional emittance measurements from 2 to 15 micrometers. The systems can be operated under inert atmospheres or pressures down to $10^6$ mm of mercury. Sample and environmental temperatures from 77 to approximately 1000 Kelvin are available. A computer controlled data acquisition system is interface with the spectrophotometers for data logging and processing of results.

Requests from qualified researchers to use the facility will be considered although available time is limited. Arrangements will be negotiated on an individual basis.

For access information contact: Dr. Richard Birkebak, College of Engineering, University of Kentucky, Lexington, Kentucky 40506.

## HIGH VOLTAGE LABORATORY

**Mississippi State University**
Laboratory floor area is 40' x 90' with a height of 25' in the clear covering the entire floor area. Special high voltage supplies include a 500KV, 500KVA, 60Hz testing transformer; a 1200 KV impulse (lightning) generator; and a 150KV, 15KVA, 60Hz testing transformer. High current supplies include a power-follow transformer with output voltage of 3KV, 6KV, 9KV, 12KV and 15KV, with a maximum short circuit current capacity of 15,000 amperes for 8 cycles; and a 5/10 volt source having a continuous current rating of 5,000/2,500 amperes. Special instrumentation is available for studying radio interference voltages in air and corona pulses in liquid or solid dielectrics.

Faculty, graduate students and selected advanced undergraduate

students are eligible to use the facility. Access will be granted on a nominal cost basis. The cost will be determined on the basis of what equipment, staff and technical assistance is required.

For access information contact: Dr. Paul B. Jacob, Jr., Associate Head, Department of Electrical Engineering, P.O. Drawer EE, Mississippi State University, State College, Mississippi 39762.

### HYDROSTATIC PRESSURE TESTING FACILITY

**University of Miami**
The facility has an operating pressure of 0 to 10,000 psi and an internal volume of 9.4 inch diameter by 27 long, tapering to a 3.7 inch diameter at a maximum length of 44 inches. Accessories include electrical feedthrus (5 conductors).

Faculty and graduate students are eligible to use the facility. The facility is to be operated by a qualified University of Miami technician; the fee will be determined on an individual basis.

For access information contact: Chairman, Division of Ocean Engineering, University of Miami, 10 Rickenbacker Causeway, Miami, Florida 33149.

### KINGMATIC MK II

**South Carolina State College**
The Kingmatic MK II has been designed from a modular approach offering a unique solution to drafting problems ranging in complexity from routine automatic drafting to computer-aided design, on-or off-line. The digital system of the director is built by means of solid state circuitry on printed boards. The Kingmatic MK II control system is particularly applicable in such areas as mapping, graphic display of computive generated data, printed circuit artwork, master generation, lofting, civil engineering, etc.

Qualified engineers who are familiar with numerically controlled systems are eligible to use the facility. A minimal service charge for tapes and supplies will be worked out on an individual basis.

For access information contact: Dr. Algernon S. Belcher, Vice President For Academic Affairs, South Carolina State College, Orangeburg, South Carolina 29115.

### LIGHT GAS ACCELERATORS

**North Carolina State University**
The Light Gas Accelerators with maximum projectile velocities of 1500'/sec. and 20,000'/sec. are equipped with laser equipment for measuring the velocity of shock waves in materials when impacted by the projectiles.

Any qualified person may use the facility. Conditions and charges depend on work to be done.

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For access information contact: Director, Engineering Research Services Division, 2158 Burlington Engineering Laboratories Building, North Carolina State University, Raleigh, North Carolina 27607.

## MAGNETIC SHAKER

**Florida Technological University**
The magnetic shaker has a 3500 pound force output, with variable and sweeping sinesoidal and random vibration programmable inputs.

Faculty and students with proper faculty supervision are eligible to use the facility. Maintenance charges will be arranged with the user.

For access information contact: Dr. D.R. Kersten, Dean of the College of Engineering, Florida Technological University, Orlando, Florida 32816.

## MATERIALS TESTING SYSTEM

**Virginia Polytechnic Institute and State University**
This electro-hydraulic testing system is capable of applying axial loads only, torsional loads only, and combined axial and torsional loads. It is a closed-loop axial-torsional system with + 100,000 lb. static and + 40,000 lb. dynamic capacities in axial loading, and + 50,000 in lb. static and + 20,000 in lb. dynamic capacities in torsional loading. Any time-varying loading may be prescribed and data is recorded electronically and graphically.

Faculty and graduate students are eligible to use the facility. Facility operation is provided by a qualified operator. All users will be charged maintenance costs.

For access information contact: Dr. Daniel Frederick, Head, Engineering Science and Mechanics Department, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## MELT SPINNING OF FIBERS LABORATORY

**University of Tennessee**
The laboratory contains extruder and spin pump for spinning of synthetic fibers. There are two units, one with 1" diameter modern plastics extruder, and one with 1/2" diameter Fourne extruder. The latter may be moved along a six foot column and may be used to spin fiber directly in front of an X-ray beam from a rotating anode X-ray generator. There are also facilities for nitrogen purge.

For access information contact: Dr. J. E. Spruiell, Department of Chemical and Metallurgical Engineering, University of Tennessee, Knoxville, Tennessee 37916.

## MICROMERITICS LABORATORY

**Georgia Institute of Technology**
This laboratory is devoted to research activities involving matter in finely divided form. It is equipped (1) to measure the size and shape of

dust, smoke, or fume particles and the size of liquid droplets; (2) to collect and sample for such material during processing operations or from the atmosphere; and (3) to carry out subsequent physical and chemical analysis. These latter capabilities include specific surface area evaluation of powders, the nature of the pore structure in objects formed from powders, the viscous and electrophoretic properties of slurries and emulsions, light scattering and transmission characteristics, bulk and absolute densities, electrostatic behavior, dispersion and compaction parameters, wettability, and others.

Faculty, graduate students, and industry representatives are eligible to use the facility. The equipment is quite specialized and its use requires the attendance of a member of the laboratory staff. Charges must cover this staff time as a minimum.

For access information contact: Dr. Clyde Orr, School of Chemical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

**MODEL PROPELLER AND HELICOPTER ROTOR STATIC TEST FACILITY**

**Georgia Institute of Technology**

This facility is capable of testing model helicopter rotors and airplane propellers having diameters as large as four feet at speeds up to 5000 RPM. A hub for a two-bladed rotor is available and is instrumented to measure thrust and torque. A 52-channel mercury slipring assembly is installed on the drive shaft. Flow visualization equipment, vector anemometry, and a versatile data acquisition system is available. The static thrust stand is rated for 150 pounds and 15 horsepower maximum.

Arrangements will be made on an individual basis.

For access information contact: Dr. Robin B. Gray, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

**NEAR FIELD MEASUREMENT FACILITY**

**Georgia Institute of Technology**

The facility is capable of measuring near zone electromagnetic radiation over the frequency range of 2-20 GHz. Planar apertures 8' x 8' can be measured as well as cylindrical apertures 8' high and 12' in diameter. The facility is automated with its own special purpose controller-computer. Data can be displayed numerically or in one or two dimensional plots in real time.

Faculty, graduate and undergraduate students are eligible to use the facility. A priority system is used in scheduling use of the facility with top priority given to sponsored research.

For access information contact: Dr. Allen Ecker, Radar Division, School of Electrical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

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## NEUTRON ACTIVATION LABORATORY

**Virginia Polytechnic Institute and State University**

The laboratory contains very sophisticated data acquisition, storage and processing equipment. The laboratory includes sophisticated techniques for computer coupling in the processing of data.

The facility may be used by faculty, graduate and undergraduate students in research and instruction. Fees for analyzation of samples will vary according to specimens.

For access information contact: Dr. A.K. Furr, Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## NUCLEAR ANALYTICAL LABORATORY

**University of Florida**

The laboratory consists of specialized facilities and equipment for supporting neutron activation and x-ray flourescence analysis, as well as multi-element low level counting applications. The 100 Kw Training Reactor and two 14 MeV neutron generators provide versatile neutron activation capabilities, while the 4 MeV Van de Graaff accelerator is an excellent x-ray flourescence excitation tool. A well equipped Radiochemistry Laboratory, with a remote manipulator-equipped hot cave, and low level, shielded radiation counting areas round out the facilities.

Faculty, graduate students, and industrial organizations are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. M.J. Ohanian, Chairman, Department of Nuclear Engineering Sciences, University of Florida, Gainesville, Florida 32611.

## NUCLEAR CENTER

**Louisiana Tech University**

The Louisiana Tech Nuclear Center houses specialized counting equipment and radiation sources for use in educational, research and industrial programs. The equipment (including survey instruments, multichannel analyzers and a wide variety or detectors) is being used campus-wide and could be shared with other institutions. The radiation sources (including a 15,000 curie Cobalt 60 source, a calibrated Radium source, a beta source, an alpha source and neutron sources) are available for use throughout the region. Gamma dose rates up to about 750,000 rads per hour can be provided.

Faculty members, graduate and undergraduate students, high school science teachers and high school science students when accompanied by their science teacher are eligible to use the facility. Charges for one-time service is not anticipated. However, this is open and each case will be evaluated individually.

For access information contact: Dr. Charles A. Killgore, Director, Louisiana Tech Nuclear Center, Louisiana Tech University, Ruston, Louisiana 71270.

## NUCLEAR LABORATORY

**The Triangle Universities Nuclear Laboratory**
The Triangle Universities Nuclear Laboratory, jointly staffed by North Carolina State University, the University of North Carolina at Chapel Hill and Duke University, has a 0-35 Mev cyclo-graaf. It is located at Duke University.

Accommodation of outside groups or individuals will depend upon availability of machine time and importance of work proposed. No charge will be made for machine time or use of ancillary equipment but salaries and travel costs must be borne by user.

For access information contact: Dr. H. W. Newson, Director of Triangle Universities Nuclear Laboratory, Department of Physics, Duke University, Durham, North Carolina 27706.

## NUCLEAR PLASMA AND LASER FACILITY

**University of Florida**
The plasma laboratory is equipped with all the equipment needed to do conventional plasma work and specialized research in nuclear plasmas as well. Major equipment items are a 2.4 meter Ebert-Mount spectrograph, several Czerny-Turner-Mount spectrographs, a Littrow Quartz spectrograph, a 1 m-Rowland Mount Vacuum spectrograph and a 0.3 m MacPherson scanning spectrometer. For data evaluation a Fabri-Tek signal averager and a microdensitometer are available on line with an IBM 1800 digital computer. For research in laser development and laser applications a large $CO_2$ laser with a power supply delivering a peak power of 100 Mw up to 400 times per second, several smaller $CO_2$ lasers, high power HF and CF31 lasers are available. For alignment purposes several He-Ne lasers are available in addition to laser power meters, IR-detectors and a spectrum analyzer for the $CO_2$ laser lines.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. M. J. Ohanian, Chairman, Department of Nuclear Engineering Sciences, University of Florida, Gainesville, Florida 32611.

## NUCLEAR REACTOR

**North Carolina State University**
Pulstar, heterogeneous, uranium-fueled, pool-type, capable of one megawatt steady state output and 2200 megawatt pulsed output is available.

Any qualified person is eligible to use the facility. Conditions and charges will depend on work to be done.

For access information contact: Director, Engineering Research Services Division, 2158 Burlington Engineering Laboratories Building, North Carolina State University, Raleigh, North Carolina 27607.

## NUCLEAR SCIENCE CENTER

**Texas A&M University**

The Nuclear Science Center reactor is a 1 Mw steady state, TRIGA Mark III, fueled, pool-type reactor which can be pulsed to power levels of 1000 Mw. Numerous irradiation facilities are available including a large exposure room capable of handling large animals. Several laboratories equipped with the latest nuclear equipment are located adjacent to the reactor for users of the facility.

Faculty members, classroom groups, and graduate students are eligible to use the facility. If the research is sponsored, the sponsor is expected to pay for the reactor services. Otherwise, the Reactor Sharing Program (USAEC) funds can be used to reimburse the Nuclear Science Center for these services.

For access information contact: Dr. John D. Randall, Director, Nuclear Science Center, Texas A&M University, College Station, Texas 77843.

## PERSONAL RAPID TRANSIT SYSTEM

**West Virginia University**

The Personal Rapid Transit System is an automated, computer controlled transportation system using small, driverless vehicles operated on dedicated guideways and which is either elevated or at a grade. This system connects the three stations on the West Virginia University campuses and in the Central Business District of Morgantown. The vehicles travel at a maximum speed of 30 miles per hour and headways of 15 seconds. The stations are off line which permit vehicles to by-pass them to allow non-stop trips between any origin-destination pair.

Individuals interested in the development and operation of the Transit System are welcome to confer with university officials and members of the Industrial Engineering Department.

For information contact: Dr. Samy E. G. Elias, Assistant to the President, Rapid Transit, Industrial Engineering Department, West Virginia University, Morgantown, West Virginia 26506.

## PIPE LINE TEST FACILITY

**University of Houston**

The Pipe Line Test Facility consists of loops of high pressure capacity pipes in diameters from 2" to 20" and lengths up to 5,300' with storage tanks and support items for testing the flow characteristics of fluids and the operation of related equipment used in cross country or plant piping systems.

Faculty and graduate students may work on industry projects-in-progress as these are scheduled in the facility. Such participation will be under the direction of the Director of Pipe Line Test Facility and compensation, if any, will be arranged according to the individual situation. Any organization wishing to conduct a test, either component performance fluid flow or material serviceability, may do simply by paying for the direct costs of that particular test.

For access information contact: Dr. W. J. Graff, Director, Pipe Line Test Facility and Professor of Civil Engineering, University of Houston, Houston, Texas 77004.

### PLASMA FACILITY

**Mississippi State University**
The High Energy Plasma Facility consists of a 1.2 megawatt power supply with associated plasma equipment and a Mach 12 plasma test section.

Faculty members and graduate students are eligible to use the facility. Charges will be determined on an individual basis.

For access information contact: Dr. Charles B. Cliett, Head, Department of Aerophysics and Aerospace Engineering, P.O. Drawer A, Mississippi State University, State College, Mississippi 39762.

### PLASMA JET

**Georgia Institute of Technology**
This is an arc heated plasma dynamics facility including 300 KW D.C. power supply system, arc head, cooling water and vacuum systems, supersonic nozzles and test chamber. Diagnostic equipment includes electrostatic probes, spectrometer, picoammeter, recording systems. It operates on nitrogen, argon, and simulated air up to 10,000°K. The facility permits high temperature material testing and studies of plasma properties and flow phenomena.

There is an anticipated charge of $100 per hour of operation.

For access information contact: Dr. James C. Wu, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

### PLASMA PROPULSION FACILITY

**Auburn University**
The facility which includes a vacuum tank 6' in diameter, permits continuous operation of magnetoplasmadynamic arc jets at tank pressures of a few hundred microns. Power for the facility is supplied by 6 28 volt, 500-1,000 ampere d.c. generators. Langmuir probes, microwave probes, optical spectograph, high speed cameras (fastax & TRW Image Converter) are available for use in the facility.

Faculty members, graduate students, and upper level undergraduate

students are eligible to use the facility. The financial charge will be negotiated and based on nature and duration of tests.

For access information contact: Dr. Kenneth E. Harwell, Aerospace Engineering Department, Auburn University, Auburn, Alabama 36830.

## PLASTICS ENGINEERING LABORATORY

**Georgia Institute of Technology**
The laboratory contains a variety of plastics fabrication equipment and testing instruments. The fabrication equipment includes a 5 ounce shot capacity, 75 ton clamp force, reciprocating screw, injection molding machine, two extruders with 3/4" and 2" barrel diameters, a 50 ton compression press, a 0.7 gallon sigma blade mixer and a 36 x 36 vacuum former. Included are facilities for casting and machining prototype tooling. A number of ASTM 0-20 tests for plastics can be performed as well as other specialized tests.

Arrangements will be made on an individual basis.

For access information contact: Dr. J. D. Muzzy, School of Chemical Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## PULSE LASER

**Florida Technological University**
The High Energy Pulse Laser is a Maser Optics Model 8-869 with Model 869PS Power Supply. It produces approximately 100 joule pulse at either 6800 A or 1.04 micron wavelength.

Faculty and students with proper faculty supervision are eligible to use the facility. Maintenance charges will be arranged with the user.

For access information contact: Dr. D.R. Kersten, Dean of the College of Engineering, Florida Technological University, Orlando, Florida 32816.

## RADIO METEOR WIND FACILITY

**Georgia Institute of Technology**
The facility is one of five such facilities in the United States. It is the only one located in the south. A 5 kilowatt double sidehand suppressed carrier continuous wave transmitter operating on 32.5 MHz + 360 Hz is located in the Aerospace Engineering building on campus. The receiving site is located at Technology Park, 27 kilometers northeast of the campus. Continuous measurement is made of winds in the 80 to 100 kilometer height range by tracking the drift of ionized meteor trails formed in the region above Atlanta.

Reduced data is available gratis. Echo by echo data is available on tape at a cost of $30 per reel of 20,000 echoes.

For access information contact: Dr. R. G. Roper, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

### RAREFIED GAS DYNAMICS LABORATORY

**Georgia Institute of Technology**
This is a low density wind tunnel, 4' in diameter x 8' in length, cryopumped, with Mach 6 nozzle. It is used for rarefied gas dynamics research in flow fields about bodies.

Faculty and graduate students in research are eligible to use the facility. User must pay for supplies and the cost of a research engineer for operation.

For access information contact: Dr. Don P. Giddens, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

### REMOTE SENSING LABORATORY

**University of Miami**
Two radar systems of high power but different frequencies are available for active microwave remote sensing, research and instruction. A passive remote sensor operates at 500-kHz radio frequency to detect thunderstorms. Video taping and sophisticated video processing sytems are available. A shop with electronic test and maintenance facilities, a projection room with complete film viewing equipment for analysis of 16 and 35-mm film and a photographic darkroom are included. A large archive of radar data on various types of storms and abnormal propagation is stored on 35-mm film.

Faculty and graduate students are eligible to use the facility. There is a charge of $500 per day for operation of radars to gather data or run special tests.

For access information contact: Dr. H. W. Hiser, Director, Remote Sensing Laboratory, Post Office Box 8003, University of Miami, Miami, Florida 33124.

### RESEARCH REACTOR

**Georgia Institute of Technology**
The facility is a heterogeneous, heavy-water cooled and moderated tank type reactor. Modifications are underway to increase power level from 1 to 5 megawatts. A large number of experimental access positions are available. These include vertical thimbles for sample irradiations, horizontal beam ports for neutron diffraction experiments, special use irradiation facilities, a thermal column and a biomedical irradiation room. A pneumatic tube transport system is available for short sample irradiations. Adjacent to the reactor is a 24,000 square foot laboratory building that provides such facilities as hot cells, a counting room, and general laboratory and office space.

A published reactor use charge schedule is available.

For access information contact: Director, Frank H. Neely Nuclear Research Center, Georgia Institute of Technology, Atlanta, Georgia 30332.

## ROCK MECHANICS LABORATORY

**Virginia Polytechnic Institute and State University**
Equipment includes (1) one million pound capacity stiff testing machine for compressive testing of rock specimens, (2) 8,000 pound/ square inch lateral restraining pressure triaxial cell for specimens up to 12" in length and 6" in diameter, (3) 18" diameter diffused light polariscope.

The facility may be used for research and instruction at any level. Costs will vary according to projects.

For access information contact: Dr. Christopher Haycocks, Department of Mining Engineering, Holden Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## RYON LABORATORY

**Rice University**
The laboratory contains a strong floor of moderate capacity for the load testing of large-scale structures. One of three such facilities in the region.

Faculty members are eligible to use the facility. No financial charges are anticipated.

For access information contact: Dr. N. W. Krahl, Chairman, Department of Civil Engineering, Rice University, Houston, Texas 77001.

## SHOCK TUBE

**Duke University**
The facility consists of a steel pipe 1800' long by 1' in diameter connected with a compressor capable of flow to 5,000 cubic feet per minute at pressures from 1/2 to 1 atmosphere.

Faculty and graduate students are eligible to use the facility. The charge for using the facility will be approximately $100 per month.

For access information contact: Dr. C.M. Harmon, Mechanical Engineering, Duke University, Durham, North Carolina 27706.

## SINGLE CRYSTAL X-RAY ANALYZER

**North Carolina State University**
The analyzer is a Picker model with full-circle gonimeter, computer operated.

Any qualified person may use the facility. Conditions and charges will depend on work to be done.

For access information contact: Director, Engineering Research Services Division, 2158 Burlington Engineering Laboratories Building, North Carolina State University, Raleigh, North Carolina 27607.

## SOLID PROPELLANT RESEARCH FACILITY

**Georgia Institute of Technology**
The facility includes combustion bombs capable of a rapid depressurization quench. They can be equipped for cinephotomacrography. Maximum combustion pressure is 5,000 psia. Cinephotomacrography frame rates to 11,000 PPS with latent image magnification of 4:1 on the film plane. Differential scanning calorimeter, photomicroscopy equipment and access to scanning electron microscope and electron microprobe are available.

Faculty, graduate students, and research engineers are eligible to use the facility.

For access information contact: Dr. W. C. Strahle, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## SPERT ASSEMBLY

**University of Florida**
The SPERT Assembly is a near critical (maximum multiplication factor = 0.99) 4.8% enriched $UO_2$-fueled light water-moderated large subcritical facility driven by a pulsed neutron generator or up to a 10 curie Pu-Be source. The fuel arrays are contained in a rectangular tank, 8' long, 39" high and or variable widths. The system is designed so that both bare and reflected cores with non-moderator/moderator ratios of 0.5, 1.0 and 1.5 can be accommodated. It has been constructed for use in disturbance propagation studies and is also used for nuclear engineering laboratory experiments such as multiplication, rod-worth, flux measurements and pulsed/wave experiments.

Faculty, graduate students and industrial organizations are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. M. J. Ohanian, Chairman, Department of Nuclear Engineering Sciences, University of Florida, Gainesville, Florida 32611.

## STRUCTURAL TESTING MACHINE

**Mississippi State University**
The facility consists of a testing machine to 300,000 pounds, 10' x 10' testbed, 14' clearance, with a capability of testing beams to 40' in length.

Use of equipment would have to be under direct supervision of a faculty member. A negotiable fee will be charged, depending on the extent of time involved in set-up operations, actual testing time, and other facilities involved.

For access information contact: Dr. R. M. Scholtes, Head, Department of Civil Engineering, Mississippi State University, State College, Mississippi 39762.

## TRAFFIC SIGNAL LABORATORY

**Georgia Institute of Technology**
The laboratory contains many pieces of traffic signal control equipment which is connected to models of intersections. Primary use of the facility is to train engineers and technicians in the use of the equipment.

For access information contact: Dr. Peter S. Parson, School of Civil Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

## TRAINING REACTOR

**University of Florida**
This is a 100 Kw Argonaut type uranium-fueled graphite moderated, water-cooled reactor with eight horizontal and three vertical beam ports including a thermal column. A horizontal through-port is also available for time-of-flight and laser enhancement experiments. The maximum thermal neutron flux is $10^{12}$ n/cm$^2$/sec with a maximum fast neutron flux of the same order of magnitude. The reactor is used for multidisciplinary research as well as teaching activities.

Faculty, graduate students, and industrial organizations are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. M. F. Ohanian, Chairman, Department of Nuclear Engineering Sciences, University of Florida, Gainesville, Florida 32611.

## TRAINING REACTOR

**Texas A&M University**
The AGN-201 Training Reactor is a 100 milliwatt reactor used for training purposes. A request has been submitted to the United States Atomic Energy Commission to increase the power of the reactor to five watts to better serve the training needs of the department and state. It is the only such training reactor in the State of Texas and one of approximately ten in the United States.

Faculty or undergraduate and graduate students under the supervision of a qualified faculty member are eligible to use the facility. Only charges will be for materials consumed.

For access information contact: Dr. R. G. Cochran, Professor and Head, Nuclear Engineering, Texas A&M University, College Station, Texas 77843.

## TRAINING REACTOR

**Tuskegee Institute**
A small training/research reactor, the AGN-201, is designed for use in education, research, medical diagnosis and industrial process control. It is especially intended for applications in which a high thermal-neutron flux is not necessary.



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Faculty members, graduate students, and persons from industry may use the facility. Terms for using the facility are subject to negotiation.

For access information contact: Dr. F. E. LeVert, Tuskegee Institute, Tuskegee, Alabama 36088.

## ULTRA-HOT ELECTRON PLASMA LABORATORY

**University of Tennessee**

A hot-electron plasma (Te = $5 \times 10^{8\circ}$ K) is produced by microwave heating in a magnetic bottle. This hot electron plasma is consequently superheated by fast magnetic compression. The apparation works well now, but final goals have not yet been reached of $3 \times 10^{11\circ}$ K and $10^{16}$ /cm$^3$ in about two years.

Faculty and graduate students are eligible to use the facility. A financial charge for expenses of operation is anticipated.

For access information contact: Dr. Joseph Googe, Chairman, Engineering Department, University of Tennessee, 410 Ferris, Knoxville, Tennessee 37916.

## WATER TUNNEL

**Mississippi State University**

The facility consists of a closed loop, low-turbulence, high-velocity (75' per second) water tunnel with an 8'' test section.

Faculty members and graduate students are eligible to use the facility. Charges will be determined on the basis of individual use.

For access information contact: Dr. Charles B. Cliett, Head, Department of Aerophysics and Aerospace Engineering, P.O. Drawer A, Mississippi State University, State College, Mississippi 39762.

## WAVE TANK-OCEAN SYSTEMS MODELING FACILITY

**University of Houston**

36,000 gallon capacity, has wave-making and towing capability and is suitable for testing offshore structures. Extensive instrumentation including wave-height measurement and recording equipment, model position transducers, force transducers, and a digital computer-based data acquisition and experiment control system.

Faculty members and qualified graduate students are welcome to use the facility. The special nature of the facilities and instrumentation require that the modeling facility staff be actively involved in any work done. Use charges can be anticipated, but will vary considerably depending on the nature and extent of instrumentation, the model-making, and other support required.

For access information contact: Dr. James M. Nash, Department of Civil Engineering, University of Houston, Houston, Texas 77004.

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**WIND TUNNEL**

**Duke University**
The facility is a closed circuit subsonic wind tunnel with speeds from 10 to 250 ft/sec. It contains a test section of 20" x 28" x 6'. There is a six component load cell balance for measuring lift, drag, side force, pitch, roll and yaw.

Faculty, graduate and undergraduate students are eligible to use the facility.

For access information contact: Dr. B.R. Munson, Mechanical Engineering, Duke University, Durham, North Carolina 27706.

**WIND TUNNEL**

**Florida Technological University**
The 4" supersonic wind tunnel provides the capability of performing aerodynamic studies on various types of body shapes. The 4" test section has an upstream variable throat which allows the test section mach number to vary between 1.5 - 4.5. A four component strain gage balance is available for making force measurements on the aerodynamic body. The test section has flow visualization capability from a schlieren system with 8" mirrors.

Faculty and students with proper faculty supervision are eligible to use the facility. Maintenance charges will be arranged with the user.

For access information contact: Dr. D.R. Kersten, Dean of the College of Engineering, Florida Technological University, Orlando, Florida 32816.

**WIND TUNNEL**

**Georgia Institute of Technology**
The facility is a nine foot diameter test section with stepless speed control to a maximum of 150 mph. It may be operated in both 2 and 3 dimensional modes plus panel mount capability. It can accommodate a maximum model span of 7 feet. Its primary use is commercial with programs conducted for agencies such as Lockheed, NASA, etc.

Occupancy charge is $35 per hour; personal services are approximately $20 to $24 per hour; computer time extra.

For access information contact: Mr. John J. Harper, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

**WIND TUNNEL**

**Georgia Institute of Technology**
The facility consists of a 42" x 42" x 20' long test section, extremely low turbulence level, with adjustable side wall for variable pressure gradient. It has a maximum speed of 50 mph with stepless control from 0 to max. The primary use is as a student laboratory of instruction and for pilot research programs.

Faculty, graduate and undergraduate students are eligible to use the facility. There will be a charge for personal services plus overhead ranging from $20 to $24 per hour.

For access information contact: Mr. John J. Harper, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332.

**WIND TUNNEL**

**University of Tennessee**
This blow down type wind tunnel has a rectangular test section 12" x 12". The air supply system has a volume of 750 cubic feet and a pressure range of 65 psia to 15 psia for a duration of 10 to 60 seconds. Maximum flow rate is 200 lbs. per second and covers Mach numbers range of 0.5 to 12.

There is no charge for educational use of the facility; there is a $100 per day charge for research activities.

For access information contact: Dr. J. M. Wu, Aerospace Engineering, University of Tennessee, Tullahoma, Tennessee 37388.

**WIND TUNNEL**

**University of Texas**
The facility is a closed return atmospheric low speed wind tunnel with a test section 2' x 3' x 5'. Reynolds No: 1.2 x $10^6$ per foot; T.S. Velocity: 0-200 fps; Turbulence Factor: 1.2 (from 4.73" Ball Test, 1.1 (from 8" Ball Test). Dyn. Pressure Variation: 0.7%; Flow angle variation from mean: 0.375° (slideslip, yaw), .625° (angle of attack); Aerolab 6 component strain gage balance; yaw range: 360°; angle of Attack Range: 25°. This facility is used for Aerospace Engineering undergraduate laboratories as well as for graduate experimental research.

Faculty members and graduate students could use the facility on non-sponsored research on a limited scheduled basis.

For access information contact: Dr. Jack E. Fairchild, Aerospace Engineering, University of Texas, Arlington, Texas 76010.

**WIND TUNNEL**

**Virginia Polytechnic Institute and State University**
The facility consists of a supersonic blow-down wind tunnel with a Mach Number Range from 1.3 to 4.6 (soon to be increased) with a 9" x 9" test section. Tunnel Instrumentation includes extensive pressure measurement equipment, six component force balances, several schlieren and shadowgraph systems, and two high speed photography systems.

This facility may be used by faculty, graduate and undergraduate students for instruction and student project work. This facility is available for sharing purposes. The fees will vary according to use of the facility.

For access information contact: Dr. James F. Marchman, III, Department of Aeronautical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## WIND TUNNEL

**Virginia Polytechnic Institute and State University**
The facility may be classified as a continuous, closed jet, single return, subsonic wind tunnel. It contains a 22' long interchangeable round and square test sections of 6' cross section. The wind tunnel is one of the largest university owned tunnels in the Southeast and is the only wind tunnel in the world which can produce curved and rolling flows for dynamic stability test. The facility is also used for non-aeronautical tests.

The facility may be used by both graduate and undergraduate students in instruction and student project work. Charges will be $105 per test run hour. Additional fees will be charged for labor and materials.

For access information contact: Dr. James F. Marchman, III, Department of Aerospace Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## WIND TUNNELS

**North Carolina State University**
The facilities include the Supersonic Blowdown Wind Tunnel, test section 6" x 6"; the Hypersupersonic Wind Tunnel with continuous flow and capability of operating at very low Reynolds numbers, test section 8" x 10"; continuous flow transonic wind tunnel, test section 7" x 7"; 6' diameter x 12' high vacuum chamber pumped by two 48" oil diffusion pumps; A.D. Little Model 3L Helium crysotat; Plasma Dyne Corporation, 40 kw arc-jet.

Any qualified person may use the facilities. Conditions and charges will depend on work to be done.

For access information contact: Director, Engineering Research Services Division, 2158 Burlington Engineering Laboratories Building, North Carolina State University, Raleigh, North Carolina 27607.

## X-RAY DIFFRACTION MICRO-CAMERA LABORATORY

**University of Tennessee**
The facility contains a Phillips micro-camera with pinholes of 0.002" and 0.004" diameter. It is capable of obtaining diffraction patterns from samples too small or too thin for standard x-ray cameras, e.g. single fibers or thin films. It is particularly applicable to polymer specimens.

For access information contact: Dr. Ed. S. Clark, Department of Chemical and Metallurgical Engineering, University of Tennessee, Knoxville, Tennessee 37916.

## X-RAY DIFFRACTOMETER AND PDP-8 COMPUTER

**Virginia Polytechnic Institute and State University**

The Automated Siemens X-Ray Diffractometer and PDP-8 Computer is a system for obtaining X-ray diffraction profiles at two Theta intervals. The system is unique in that it incorporates a Jagodzinski K-Alpha-1 monochromator. This device provides a high resolution system useful for atomic diffusion studies in crystalline solids.

Faculty, graduate students and upper division undergraduate students are eligible to use this facility for research pruposes. No financial charges are anticipated.

For access information contact: Dr. Charles R. Houska, Division of Metallurgical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## AANDERAA TAPE CONVERSION FACILITY

**University of Miami**

The facility consists basically of a PDP8/e computer and associated interfacing hardware to convert Aanderaa current meter tapes to standard 7-track, 1/2" computer compatible tape. Calibrated listings of the Aanderaa data are also available.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. W. Duing, Chairman, Division of Physical Oceanography, Rosenstiel School of Marine & Atmospheric Science, 10 Rickenbacker Causeway, Miami, Florida 33149.

## ALTITUDE AND HUMIDITY TEST FACILITY

**Rice University**

The major features of the facility are as follows: test volume: 64 cubic feet (4' x 4' x 4'); altitude: up to 200,000', temperature: —70°C to 150°C; relative humidity: 20 to 80%.

Faculty members from other institutions are eligible to use the facility. Cost are anticipated as being $10.00 per hour.

For access information contact: Dr. R. F. Stebbings, Chairman, Department of Space Science, Rice University, Houston, Texas 77001.

## ANTARCTIC MARINE GEOLOGY RESEARCH FACILITY AND CORE LIBRARY

**Florida State University**

The Antarctic Marine Geology Research Facility and Core Library is an NSF established, curatorial and research activity, designed specifically as a national depository for geological materials collected in polar regions, with particular emphasis on those materials retreived from the floor of the ocean in Antarctic and sub-Antarctic waters aboard the USNS ELTANIN.

Faculty and other qualified individuals are eligible to use the facilities. Costs will be determined by the value of the request for using the facilities.

For access information contact: Dr. G. W. DeVore, Florida State University, Tallahassee, Florida 32306.

## AQUATIC SCIENCES CENTER

**University of Florida**

The Center is responsible for intensive development and coordination of University-wide activities in the freshwater, estuarine, and coastal marine sciences. Undergraduates and graduate support is provided by the Center, enabling students in cooperating departments to investigate problems related to Florida's aquatic resources. Field research facilities are available at nearby Cedar Key, Welaka, and Marineland.

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Individuals interested in aquatic sciences are eligible to use the facility.

For access information contact: Director, Center for Aquatic Sciences, 2001 McCarty Hall, University of Florida, Gainesville, Florida 32601.

## ARCHAEOLOGY AND ANTHROPOLOGY INSTITUTE

**University of South Carolina**

This is a full-time archaeological research facility. Specialities include prehistoric, historic, and marine archaeology. The facility includes an archaeological processing laboratory and an archaeological preservation laboratory for preserving metal, ceramic, wood, leather, and other archaeological specimens. The latter especially, but not exclusively, relates to marine archaeology. Staff photographic studio and darkroom as well as illustration section are available.

Faculty, graduate and selected undergraduate students are eligible to use the facility. No specific charge is made but visitors must bear all costs of their own research.

For access information contact: Dr. Robert L. Stephenson, Director, Institute of Archaeology and Anthropology, University of South Carolina, Columbia, South Carolina 29208.

## ARGON ISOTOPIC ANALYSIS SYSTEM

**Georgia Institute of Technology**

This is a system for the release of Argon from mineral and rock samples, purification and isotopic analysis of Argon, and measurement of Argon by stable isotope dilution using Argon-38. The (MS-10) mass-spectrometer is on-line with the release and purification system, allowing high sensitivity and precision, and relatively rapid sample analysis. The primary use of the system is for $Ar^{40}/K^{40}$ ratio measurements applicable to problems of geologic age determination and to studies of the geochemistry of Potassium via its daughter Argon.

Faculty and graduate students are eligible to use the facility in conjunction with a cooperative research program. Special training in residence is required for anyone who wishes to use the system without continuous supervision. Argon isotopic analyses may be performed on service basis at a cost of approximately $100 per analysis.

For access information contact: Dr. J. M. Wampler, Associate Professor, School of Geophysical Sciences, Georgia Institute of Technology, Atlanta, Georgia 30332.

## ASTRONOMY FACILITIES

**Louisiana State University**

A 36" reflecting telescope and associated facilities for astronomical research are available.

Qualified faculty and graduate students are eligible to use the facilities. Conditions for using the facilities will be determined by the Observatory Director.

For access information contact: Dr. Arlo U. Landolt, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, Louisiana 70803.

### ATMOSPHERIC CHEMISTRY AND PHYSICS LABORATORY

**Texas A&M University**
The laboratory includes adjacent walk-in cold (25°F) and freezer (0°F) rooms for work in atmospheric chemistry and cloud and precipitation physics with one fume hood.

Faculty and graduate students are eligible to use the facility. Cost, if any, will depend on proposed use.

For access information contact: Chief, Atmospheric Chemistry Section, Department of Meteorology, Texas A&M University, College Station, Texas 77843.

### ATOMIC COLLISION APPARATUS

**Western Kentucky University**
The Apparatus produces mass analyzed beams of ions, atoms, or molecules which collide with a target gas under single collision conditions. It has an energy range of 25-2500 eV (ion beams) and 100-2500 eV (neutral beams). The neutral beams are detected by a holometer. Spectra of collision light are taken with a 0.3 meter monochromator and photomultiplier 1500-6000A. Signal processing and recording are done by photon counting electronics or lock-in amplifier and strip chart recorder.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Martin S. Longmire, Department of Physics and Astronomy, Western Kentucky University, Bowling Green, Kentucky 42101.

### ATOMIC COLLISION LABORATORY

**University of Maryland**
A facility for the study of atomic and molecular collisions at energies below one kilovolt with apparatus for the production of mass analyzed ion beams as well as neutral molecular beams is available. It has detection systems capable of mass and energy analysis of charged particles as well as photons from the visible to vacuum u.v. chambers maintained at 10-F mm.

Faculty members and graduate students who have some familiarity with the techniques of ion production, charged particle detection, photon detection and high vacuum technology are eligible to use the facility.

For access information contact: Dr. Michael A. Coplan, Institute for Fluid Dynamics and Applied Mathematics, University of Maryland, College Park, Maryland 20742.

## AUTOMATIC FAST RESPONSE FROST-DEW POINT HYGROMETER LABORATORY

**University of Tennessee**

The facility contains a completely automated frost-dew point hygrometer with ultra fast response capability including the hygrometer, refrigerant circulation system, integral two-stage low-temperature (100° to 125° F) refrigerator, a cascaded controller of unconventional design, as well as ancillary automata. The continuous operating and recording range of the instrument is 100° to 200° F. The design is characterized by a first-order transfer function and time constant of 1.3 seconds.

For access information contact: Dr. S.H. Jury, Department of Chemical and Metallurgical Engineering, University of Tennessee, Knoxville, Tennessee 37916.

## CENTER FOR THEORETICAL STUDIES

**University of Miami**

This is a theoretical research facility with current interests primarily in theoretical physics (unified field theory, particle physics, atomic and molecular physics, solid state physics), theoretical chemistry (statistical mechanics, thermodynamics), biophysics and biochemistry (membrane phenomena) and in the application of scientific methods to problems of society. The staff consists of two permanent members, five to ten postdoctoral fellows and a number of distinguished visiting scientists.

Qualified scientists are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Miss Susan Widmayer, Deputy Secretary, Center for Theoretical Studies, University of Miami, Post Office Box 9055, Coral Gables, Florida 33124.

## CESIUM PLASMA DEVICE

**University of Maryland**

A device for providing a fully ionized low temperature plasma which is convenient for a large variety of experiments concerned with plasma instabilities, wave pheonomena and transport properties. Most of the experimental parameters can be changed over a wide range and the device operates continuously rather than pulsed.

Faculty members and graduate students are eligible to participate as members of the research group, working on on-going projects. Users will be required to provide their own support. It is not anticipated that any additional financial charges will be required.

For access information contact: Dr. Herbert Lashinsky, Institute for Fluid Dynamics and Applied Mathematics, University of Maryland, College Park, Maryland 20742.

### CHEMICAL IONIZATION MASS SPECTROMETERS

**University of Virginia**
The facility includes instrumentation for high and low resolution chemical ionization mass spectrometry.

Faculty, graduate and undergraduate students are eligible to use the facility. Financial charges, if any, will be arranged on an individual basis.

For access information contact: Dr. Donald F. Hunt, Associate Professor, Chemistry Department, University of Virginia, Charlottesville, Virginia 22901.

### CHEMICAL REACTION AND PHYSICAL PROPERTIES INSTRUMENTS

**Rice University**
Facilities for studying chemical reactions and physical properties at extreme conditions, notably, at very high temperatures, very low temperatures and very high pressures. These include mass spectrometers fitted with Knudsen cells for making high temperature thermodynamic measurements, facilities for studying reactions in plasmas, two extremely high pressure devices, one of which is a tetrahedral anvil, several instruments for matrix isolation studies and equipment for shock wave studies.

Faculty members are eligible to use the facilities. No financial charges are anticipated.

For access information contact: Dr. J.L. Franklin, Chairman, Department of Chemistry, Rice University, Houston, Texas 77001.

### CIRCULARLY POLARIZED LUMINESCENCE SPECTROPHOMETER

**University of Virginia**
This facility consists of a high-sensitivity, high-resolution luminescence spectrophotometer capable of measuring circular polarization in the spontaneous emission spectra of chiral systems.

Research personnel with some experience in specialized spectroscopic techniques are eligible to use the facility.

For access information contact: Dr. Frederick S. Richardson, Associate Professor, Chemistry Department, University of Virginia, Charlottesville, Virginia 22901.

### COMPUTER CONTROLLED RAMAN SPECTROSCOPY WITH TUNABLE DYE LASER

**Georgia Institute of Technology**
The facility consists of a double-pass monochrometer interfaced for a PDP/8f computer. The Raman source is either a 500 m watt argon ion

laser or a 100 m watt (max.) tunable dye laser (tuning range 560-650 nm). A 20°K to 300°K refrigerator is available.

Faculty and graduate students are eligible to use the facility. The charge will be $10 per hour.

For access information contact: Dr. D. C. O'Shea, Assistant Professor, School of Physics, Georgia Institute of Technology, Atlanta, Georgia 30332.

## COMPUTER GRAPHICS AND MAPPING

**University of South Carolina**
The department has assembled and operationalized a number of computer graphics and mapping programs. These include GRIC, GRIDS, SYMAP, CALFORM, C-MAP, AUTOMAP, OTOTROL and SYMVU. The department also possesses a GRAPH-PEN sonic digitizer with a 36" x 36" sensitizing surface. The GRAPH-PEN is linked to an IBM 029 Keypunch.

Arrangements for extended use would have to be worked out on an individual basis. The use of the mapping programs would require computer time that would have to be arranged with the department of computer services.

For access information contact: Dr. David J. Cowen, Department of Geography, University of South Carolina, Columbia, South Carolina 29208.

## CRYODYNE HELIUM LIQUIFIER

**Northeast Louisiana University**
The liquifier has a .5 liter per hour capacity.

Faculty, graduate and undergraduate students are eligible to use the facility. Reimbursement will be required for operating expense and expendable materials and supplies only.

For access information contact: Dr. Daniel E. Dupree, Dean, College of Pure and Applied Sciences, Northeast Louisiana University, Monroe, Louisiana 71201.

## $^{137}$Cs SOURCE

**Tuskegee Institute**
The $^{137}$Cs 0.66 NeV Photon Source is a ceiling-mounted unit that provides 158 cm of longitudinal travel, 41 cm of lateral travel and 122 cm of vertical motion. The source is designed to be used in attentuation and irradiation studies.

Faculty members, graduate students, and persons from industry may use the facility. Terms for using the facility are subject to negotiation.

For access information contact: Dr. F.E. LeVert, Tuskegee Institute, Tuskegee, Alabama 36088.

## CYCLOTRON

**University of Maryland**

The only one of its size funded by the Atomic Energy Commission. Its energy range is unique in its field. The University of Maryland Cyclotron is a modern variable isochronous cyclotron capable of providing intense precisely controllable beams of positive ions. The cyclotron laboratory consists of the cyclotron, beam transport system, experimental laboratories, on-line computer, and general supporting facilities.

Qualified persons may apply to the Director of the Cyclotron Laboratory giving a detailed statement of work to be performed along with a discussion of the scientific merits of the proposed work. Users are expected to share in the operating costs.

For access information contact: Dr. Harry Holmgren, Department of Physics, University of Maryland, College Park, Maryland 20742.

## CYCLOTRON

**Samford University**

This small cyclotron produces radioactive isotopes for medical and other usage in the area.

Eligible to use the facility are faculty members and graduate students—the latter preferably accompanied by faculty members. Fee: $25.00 minimum charge and $25.00 per hour. Only authorized personnel (all of whom are trained personnel with experience on the Stockham Cyclotron) may operate the Cyclotron. Therefore, arrangements must be made for staff to be present.

For access information contact: Dr. Perry W. Morton, Jr., Head, Department of Physics, Samford University, Birmingham, Alabama 35209.

## CYCLOTRON INSTITUTE

**Texas A&M University**

The fundamental instrument is an 88" variable energy cyclotron capable of accelerating protons to an energy in excess of 50 million electron volts (MEV) and to accelerate alpha particles and heavier nuclei to an energy of 125 MEV. This modern $6,000,000 facility was completed in 1967. The Institute provides the means for studying such topics as atomic and nuclear structures, the effects of energetic charged particles on biological specimens, and for producing materials with residual radio-activity to develop sensitive activation analysis techniques.

Sharing arrangements for outside usage for chemical and physical studies are handled on an individual basis.

For access information contact: Dr. T. T. Sugihara, Director, Cyclotron Institute, Texas A&M University, College Station, Texas 77843.

## EARTH AND PLANETARY RESEARCH FACILITIES

**University of Texas Medical Branch**

This is a unit for carrying out research in marine geology and geophysics and planetary sciences. It includes a research vessel IDA GREEN equipped with 12 kHz sounder, 3.5 kHz sounder, single channel seismic recorder with air gun source, 24 channel digital recorder with air gun source, magnetometer, satellite navigator, underwater camera, hydrographic winch and shore facilities for analyzing these data including extensive computing facilities. There is a central data center for four 3 component moon seismometers, including computer analysis facilities, seismograph station located in a salt mine in Hockley Salt Dome, 24-channel digital recording equipment truck mounted for land refraction and reflection seismic measurements.

Faculty, graduate and undergraduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Maurice Ewing, Chief, Earth and Planetary Sciences, Marine Biomedical Institute, University of Texas Medical Branch, Galveston, Texas 77550.

## ELECTRON ACCELERATOR

**University of Houston**

The 1.5 MeV 1kW Dynamitron Electrostatic Electron Accelerator is used primarily for radiation chemical studies; horizontal configuration fitted with electromechanical shutter permits good dose control.

Faculty, postdoctoral and graduate students are eligible to use the facility. The anticipated financial charge is $15.00 per hour or $100.00 per day.

For access information contact: Dr. G. G. Meisels, Chemistry Department, University of Houston, Houston, Texas 77004.

## ELECTRON MICROSCOPE FACILITY

**Mississippi State University**

The facility presently houses a Siemens 101 high resolution transmission electron microscope, a complete darkroom, a tissue preparation laboratory, a separate room designed for ultra microtomy, and a teaching laboratory. Equipment for tissue preparation, including a LKB Ultratome III ultramicrotome, a glass knife breaker, and a vacuum evaporator device, is available. The facility also has an excellent lightmicroscope.

Qualified researchers are eligible to use the facility. There will be a charge of $3.00 per micrograph and an additional charge of $20.00 if tissue is prepared for study in the electron microscope.

For access information contact: Dr. Lewis B. Coons, Coordinator, Electron Microscope Facility, Drawer EM, Mississippi State University, Mississippi State, Mississippi 39762.

## ELECTRON MICROPROBE

**University of Georgia**

This is a MAC 400 electron probe microanalyzer (3 crystal spectrometers) equipped with Canberra energy dispersive detection system. It is used for quantitative elemental analysis (atomic numbers greater than 9) of spots down to 1 micron diameter. It can also be used in scanning mode for mapping element distribution on 200 to 2000X scales. Its primary use is for minerological rock or ceramic materials by geologists. It is also used for microanalysis by biologists and ecologists.

All interested individuals are eligible to use the facility on a time available basis. There will be a $40 per hour charge for use of the facility with a technician and a $20 per hour charge for individuals qualified to operate the instrument independently.

For access information contact: Dr. John C. Stormer, Jr. Department of Geology, University of Georgia, Athens, Georgia 30601.

## ELECTRON MICROSCOPE LABORATORY

**University of South Carolina**

The laboratory has the capability for ultrastructural investigations of biological and non-biological materials. The equipment includes two transmission electron microscopes (SIEMENS ELMISKOP 1A and JEOL JEM100-B) one scanning electron microscope (JEOL JSM-U3), three Porter-Blume Ultramicrotomes MT-II, and six diamond knives. Transmission detector, EDAX energy dispersive x-ray microanalyzer with EDIT computer system are attached to the scanning electron microscope and qualitative and quantitative analyses of elements in thin sections and bulk materials are possible.

Faculty and graduate students are eligible to use the facility. There will be no charge for use of the facility; however, extensive users must furnish their own supplies.

For access information contact: Dr. Norimitsu Watabae, Director, Electron Microscope Laboratory, University of South Carolina, Columbia, South Carolina 29208.

## ELECTRON MICROSCOPY CENTER

**Texas A&M University**

The equipment includes two modern Hitachi transmission electron microscopes and a new JEOL scanning electron microscope equipped with an X-ray microanalyzer and a mini-computer. In addition, there is a large array of ancillary equipment including such items as microtomes, a shadow caster, light microscopes and other items needed in the successful operation of a modern electron microscopy center.

Faculty members and graduate students are eligible to use the facility. Two rates exist: (1) For all supplies, photography, and operations: $30/beam hour; (2) For microscope use only: $15/beam hour.

For access information contact: Dr. E. L. Thurston, Electron Microscopy Center, Texas A&M University, College Station, Texas 77843.

### ELECTRON PROBE X-RAY MICROANALYZER

**North Carolina State University**
A Philips model AMR-3, with capability for analyzing boron and elements having higher atomic numbers.

Conditions and charges for using the facility depend on work to be done.

For access information contact: Director, Engineering Research Services Division, 2158 Burlington Engineering Laboratories Building, North Carolina State University, Raleigh, North Carolina 27607.

### ELECTRON PROBE X-RAY MICROANALYZER WITH SCANNING ELECTRON MICROSCOPE

**Virginia Polytechnic Institute and State University**
The electron microprobe is an instrument designed for nondestructive, quantitative chemical analysis of minute volumes of solid materials with detectability levels to 10-14 gram. Digitalized data corrected by computer for matrix effects can be converted to quantitative elemental weight percentages. The secondary and backscattered electrons, as well as the primary x-rays, may be used to electronically image compostional and topographical features at high magnifications (to 2500X).

Faculty, graduates and undergraduate students are eligible to use the facility for instructional and research purposes.

For access information contact: Dr. P. H. Ribbe, Department of Geological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

### ELECTRON SPECTROMETER

**Virginia Polytechnic Institute and State University**
This equipment is used to bombard a surface with X-rays in order to study the nature of surfaces and the chemical bonding of their molecules. The uniqueness of this facility is the fact that it is completely automated. Automation is necessary for data manipulation.

Equipment is available to faculty members and graduate students. Fees will be assessed individually.

For access information contact: Dr. Alan Clifford, Department of Chemistry, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

### 640 ELEMENT 26.3 MHz RADIO TELESCOPE

**University of Florida**
The instrument has a collecting area of nearly eight acres, with a beam of 5.5° x 2.5° at the zenith. The beam is steerable and multiple-

beam operation is possible. The polarization of all or part of the array can be varied. Ultimate sensitivity is about 10 flux units. Ancillary equipment is available for amplification and for both paper and tape recording, as well as for very long baseline (VLBI) interferometry. A variety of smaller radio telescopes covers the decametric radio spectrums. Dormitory facilities are available at the observatory, which is 50 miles from the campus.

Faculty, graduate students, and qualified physical scientists with significant and appropriate research problems are eligible to use the facility.

For access information contact: Dr. Alex G. Smith, Director, Radio Observatory, Department of Physics and Astronomy, University of Florida, Gainesville, Florida 32611.

## GEOCHRONOLOGY LABORATORY

**The University of Georgia**

The Laboratory's prime activities include the carbon-14 age-dating of carbonaceous material. Research personnel submitting samples for the dating process include archeologists, geologists, and oceanographers.

Research personnel, faculty members, graduate students and industrial representatives are welcomed to use the geochronology facilities. A financial charge will be made for chemicals, laboratory supplies, and age dating of samples (approximately $100.00 for each radiocarbon age dating sample).

For access information contact: Dr. John E. Noakes, Director, Geochronology Laboratory, The University of Georgia, Athens, Georgia 30601.

## GEOLOGIC SITE

**The University of Alabama**

The Little Stave Creek Geologic Site was discovered in 1918, but did not receive wide attention until the 1930's when members of the Alabama and U.S. Geological Surveys investigated the area more thoroughly. Today, students of Geology from all over the world find Little Stave Creek of interest because of the complete, uninterrupted geologic sections exposed.

For access information contact: Dr. W. Gary Hooks, Department of Geology and Geography, Box 1945, The University of Alabama, University, Alabama 35486.

## GEOLOGY CAMP

**West Virginia University**

The facilities in the Appalachian Geology Camp include two faculty cottages with kitchen and bath, each sleeps six; living and working accommodations for 24 students; and a mess hall for 75-80 people.

Available to faculty and students for short (two-three day) or extended (two-three week) periods. Users will be responsible for any damage incurred during use. There will be a $3/day/person charge and $50 deposits if mess facilities are used.

For access information contact: Dr. John J. Renton, Department of Geology, West Virginia University, Morgantown, West Virginia 26506.

## GEOPHYSICAL RESEARCH EQUIPMENT

**Georgia Institute of Technology**
The School of Geophysical Sciences has seismic research equipment (micro-earthquake recorders, refraction and reflection equipment), gravity meters, magnetometers, spinner magnetometer and associated geophysical equipment.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Charles E. Weaver, Director, School of Geophysical Sciences, Georgia Institute of Technology, Atlanta, Georgia 30332.

## GEOTHERMAL MEASUREMENTS LABORATORY

**Virginia Polytechnic Institute and State University**
This facility measures precise temperatures and temperature gradients in the earth, the thermal conductivity of rock and the amount of heat generated in rocks by the measurements of uranium, thorium, and potassium in rocks using gamma-ray spectroscopy.

The facility may be used by those interested in the study of geophysics. There is no financial charge anticipated.

For access information contact: Dr. J.K. Costain, Department of Geological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24601.

## HIGH RESOLUTION FOURIER TRANSFORM NMR

**University of Virginia**
This is a JEOL Fourier transform 100MHz multinuclear resonance spectrometer which can perform experiments with $H^1$, $B^{11}$, $C^{13}$, $p^{31}$ nuclei.

Samples will be run by a technician. Costs will be approximately $7 for 30 minutes for one pulse.

For access information contact: Dr. R. Bruce Martin, Professor, Department of Chemistry, University of Virginia, Charlottesville, Virginia 22901.

## HIGH RESOLUTION INFRARED SPECTROMETER

**University of Tennessee**
This is a very high resolution infrared vacuum spectrometer operating

in the one-thirty micrometer wavelength region. Resolution achieved to date exceeds 0.014 $cm^{-1}$ measured as full width at half maximum of P(4) of H37Cl at 2796.97 $cm^{-1}$. Two 20 x 40 $cm^{-1}$ echelles blazed at about 65° (31.6/mm and 79/mm) are useable as the principal dispersing element. The entire spectrometer system is computer controlled; data acquisition is also computer controlled.

Faculty, graduate students, and independent research laboratories are eligible to use the facility. Sharing of the facility is possible on an as available basis. Any charges to cover costs of use are negotiable and depend upon user requirements and available of local technical staff.

For access information contact: Dr. W.E. Blass, Physics Department, University of Tennessee, Knoxville, Tennessee 37916.

### HIGH RESOLUTION RAMAN SPECTROMETER

**University of Tennessee**

The system consists of a 2-meter focal length Czerny-Turner monochromator with a Bausch and Lomb ruled echelle (300 groves/mm), a fore-prism, pre-monochromator, a photon counting detection system, and a 4-watt argon laser for excitation. Resolution of 0.05 $cm^{-1}$ is achieveable with strong bands. Primary use of the system is high resolution spectra of gases; Raman line shapes, and pressure broadening phenomena.

Faculty and graduate students are eligible to use the facility. There is a $25 per hour charge.

For access information contact: Dr. William H. Fletcher, Professor, Department of Chemistry, University of Tennessee, Knoxville, Tennessee 37916.

### HIGH TEMPERATURE PHOTOELECTRON SPECTROSCOPY

**University of Tennessee**

The photoelectron spectroscopy of vapors at temperatures about 500°C is provided for by special spectrometers and high-temperature sources in the department of chemistry. The facility can accomodate five research workers who use the equipment to investigate the electronic structures of high-temperature substances.

Faculty and graduate students in chemistry, physics, materials science, and chemical engineering are eligible to use the facility. There is no charge for use of the facility.

For access information contact: Dr. George K. Schweitzer, Professor, Department of Chemistry, University of Tennessee, Knoxville, Tennessee 37916.

### INDUSTRIAL PHARMACY LABORATORY

**University of Tennessee Medical Units**

An industrial research and manufacturing facility for developmental and formulation work in the drug field. The facilities may be used by



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appropriate individuals on a mutually satisfactory basis to be determined by negotiation.

For access information contact: Dr. B.B. Sheth, Director, Division of Industrial Pharmacy, University of Tennessee Medical Units, Memphis, Tennessee 38103.

## INTERFEROMETER WITH SINGLE MODE ARGON ION LASER

**Georgia Institute of Technology**

The double-pass Fabry-Perot interferometer is piezoelectrically scanned. Its scattering source is equivalent to 100 m watt single mode argon ion laser output into sequentially scanned multi-channel analyzer. Also, 20°K to 300°K cold storage is available.

Faculty and graduate students are eligible to use the facility. The charge will be $10 per hour.

For access information contact: Dr. D.C. O'Shea, Assistant Professor, School of Physics, Georgia Institute of Technology, Atlanta, Georgia 30332.

## LASER FACILITY

**University of Maryland**

The Coordinated Laser Facility provides a variety of high quality lasers for optical experiments.

Faculty, graduate and postdoctoral students, and undergraduates who have a strong interest in laser fundamentals and applications are eligible to use the facility. Costs of new, specific research projects ought to be supported by user if possible. The possibility of finding extra support for outside users from local funds has not yet been determined.

For access information contact: Dr. Thomas D. Wilkerson, Institute for Fluid Dynamics and Applied Mathematics, University of Maryland, College Park, Maryland 20742.

## LASER LABORATORY AND CRYOGENICS ACCESSORIES

**University of Texas**

The laboratory consists of two high power laser systems: (1) A Coherent Radiation Model 41 $CO_2$ Laser System with monochromatic or mixed mode output over a range about 10.6 microns in either C.W. (250 watts) or pulsed (2,000 watts) mode and (2) Lear Siegler Model H-212 Ruby Laser System Q-switched with 100 joules pulse potential. In addition, the laboratory contains a Helium-Neon Laser, Perkin-Elmer Model 5200, for alignment and UV-Visible-NIR Spectrometer, Perkin-Elmer Model 350, outfitted with a Helium Cryotip, Air Products Model S/N, for analsis.

No specific limitation should exist for university or industrial researchers who have the appropriate background and interest. Students should, of course, be responsible to a participating researcher. The details of any arrangement will be worked out in advance.

For access information contact: Dr. Truman D. Black, Department of Physics, University of Texas, Arlington, Texas 76010.

### LOW ENERGY ELECTRON DIFFRACTION SYSTEM

**Northeast Louisiana University**
Complete Varian system for studying crystal surface phenomena including modest facilities for Auger spectroscopy is available.

Faculty, graduate and undergraduate students may use the facility for short-term projects. Reimbursement will be required for operating expense and expendable materials and supplies.

For access information contact: Dr. Daniel E. Dupree, College of Pure and Applied Sciences, Northeast Louisiana University, Monroe, Louisiana 71201.

### LOW TEMPERATURE REFRIGERATOR WITH ASSOCIATED ELECTRONICS

**University of Tennessee**
There is an $He^3$ - $He^4$ mixture refrigerator capable of reaching 0.010°K. Electronics for temperature determination include A.C. Bridge, susceptibility (SQUID) electronics, and angular correlation counting equipment. There is a 60 KG superconducting magnet with persistent switch and high homogeneity and stability. Mossbauer facilities in field at low temperature are of the highest quality. Digital printout of low temperature are of the highest quality. Digital printout of SQUID (Superconducting Quantum Interference Device) allow $10^4$ flux quanta to be tracked with sensitivity of $10^{-4}$ quanta.

Faculty, graduate and undergraduate students, and other scientific researchers interested in collaborative study are eligible to use the facility. Cost of liquid helium for one week run is approximately $600. Operation of equipment is limited to the three participating UTK physics collaborators due to complexity of equipment.

For access information contact: Dr. Paul G. Huray, Physics Department, University of Tennessee, Knoxville, Tennessee 37916.

### MAGNETIC CIRCULAR DICHROISM SPECTROMETER

**University of Virginia**
This is an apparatus for measuring magnetic circular dichroism at room temperature or low temperature.

Faculty and graduate students are eligible to use the facility. There will be a charge of approximately $75. The individual for whom the run is made will not have to be present at the run. A minimum of from two to four weeks advance notice is required.

For access information contact: Dr. Paul N. Schatz, Professor and Chairman, Department of Chemistry, University of Virginia, Charlottesville, Virginia 22901.

## MARINE AND ATMOSPHERIC SCIENCE LABORATORIES

**University of Miami**
The Rosenstiel School laboratories are equipped for geochemical research, physical, chemical, and geological research, atmospheric research, and various kinds of nuclear and biological studies. Many precision instruments are available for use. The Glassell Building houses a circulating sea water system for studies of ecology and behavior. There are vertebrate and invertebrate reference collections and a large library. The School operates a fleet of large and small research vessels. Two deep-sea research vessels, R/V Columbus Iselin, and R/V James M. Gilliss, are listed in separate entires in this catalog.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Warren S. Wooster, Dean, Rosentiel School of Marine and Atmospheric Science, 10 Rickenbacker Causeway, Miami, Florida 33149.

## MARINE INSTITUTE

**University of Georgia**
This is a marine laboratory dedicated to research on coastal salt marshes. It contains standard laboratory equipment. Research vessels and boats are available.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis. There will be a normal charge for housing and meals.

For access information contact: Dr. David W. Menzel, Director, Skidaway Institute of Oceanography, P.O. Box 13687, Savannah, Georgia 31406.

## MARINE MATERIALS AND CORROSION LABORATORY

**Florida Atlantic University**
This is a small, housed, ocean front laboratory into which fresh sea water is pumped from the Atlantic Ocean. It consists of various tanks and troughs in which specimens are exposed to sea water for corrosion testing and research.

Faculty, graduate students, and staff are eligible to use the facility according to availability.

For access information contact: Dr. William Tessin, Department of Ocean Engineering, Florida Atlantic University, Boca Raton, Florida 33432.

## MASS SPECTROMETER

**University of Houston**
A chemical ionization mass spectrometer with resolution of 1000 whose electron gun is pulsed on for 0.1 microseconds at a repetition


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frequency of one to five kilocycles. Single ion detection using an electron multiplier and time to pulse height conversion is employed to display an arrival time spectrum on a multichannel pulseheight analyzer. Time spans normally covered range from 20 to 200 microseconds. Changes in distributions on addition of reactant molecules can be employed to derive rate constants for ion-molecule reactions directly.

Faculty members, graduate students and postdoctoral associates familiar with mass spectrometry and with coincidence techniques and some background in ionic systems in the gas phase are eligible to use the facility. Charges will be about $75.00 per day plus the responsibility for repairs caused by failures occurring during the use of the apparatus.

For access information contact: Dr. G.G. Meisels, Chemistry Department, University of Houston, Houston, Texas 77004.

### MASS SPECTROMETER

**Virginia Polytechnic Institute and State University**
The instrument is used for the study of ocean floor settlements and rocks, age dating of rocks in the Southeast, and the determination of lead in any material. This equipment is fully automated and computer controlled.

Faculty, graduate and undergraduate students in the study of geology and geochronology are eligible to use the facility.

For access information contact: Dr. A.K. Sinha, Department of Geological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

### MASS SPECTROMETRIC CAPABILITIES

**Rice University**
Facilities include quadrupole, time-of-flight, sector field and high resolution double focusing instruments, several of which have capabilities for operating at elevated pressures, i.e., from 50 microns to about 20 Torr. Several of the instruments can be used with either negative or positive ions and several (not the same) can be used for high temperature studies. Associated with these facilities is an excellent photoelectron spectrometer (ultraviolet).

Faculty members from other institutions are welcome to use this facility. No financial charges are anticipated.

For access information contact: Dr. J.L. Franklin, Chairman, Department of Chemistry, Rice University, Houston, Texas 77001.

### MASS SPECTROMETRY CENTER

**Research Triangle Institute**
The Research Triangle Center for Mass Spectrometry was organized to provide a regional center which would serve as a common facility

for use by researchers at the University of North Carolina, North Carolina State University, Duke University, The Research Triangle Institute and other colleges and universities in the area comprised by North Carolina, South Carolina, and Virginia. The facility is coupled in a computer network with all sponsoring institutions for additional data processing capability.

Available for use by qualified researchers. Charges will be determined by the proposed use of the facility.

For access information contact: Research Triangle Institute, Research Triangle Park, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514.

## MASS SPECTROMETRY LABORATORY

**Florida State University**

The laboratory contains AEI MS-902 mass spectrometer equipped for high resolution electron impact and field ionization and automated data reduction, (AEI DS 30 systems); AEI MS-902 mass spectrometer equipped for chemical ionization and nuclide 12-90-G mass spectrometer equipped for glc introduction.

Faculty and graduate students are eligible to use the facility. There will be a charge of $35.00 per spectrum.

For access information contact: Dr. R.C. Dougherty, Department of Chemistry, Florida State University, Tallahassee, Florida 32306.

## METEROLOGY FACILITY

**Texas A&M University**

The facility contains the Multifrequency Weather Radar (1.25, 3.2 and 10.3 cm) operating from a unipedistal; the AN/GMD Rowinsonde which provides measurements of temperature, relative humidity, pressure, and wind to altitudes of 100,000'; Automatic Picture Transmission (APT) equipment; radiation and evaporation sensors; the Air-Sea Interaction water tank with provision for simulation of rain falling from a height of about 25'; satellite photorectification laboratory; simple hydrodynamics laboratory; 5-console general purpose analog computer in a shielded laboratory; shielded sensor development laboratory; atmospheric chemistry and physics laboratory with walk-in cold (25°F) and freezer (0°F) rooms; shielded laser radar laboratory; and observation platforms.

Faculty and graduate students are eligible to use the facility. Cost, if any, will be determined on an individual basis.

For access information contact: Head, Department of Meteorology, Texas A&M University, College Station, Texas 77843.

## MICRODENSITOMETER

**University of Tennessee**

The high speed x-y scanning microdensitometer is used as an aid in analyzing film transparencies generated in remote sensing, and other

research. Using an electro-optical rotating drum, pictorial information from a film negative or transparency is rapidly converted into a digital format suitable for computer data processing. Quantitative measurements are made of optical densities up to 3D, through 256 levels with a resolution of .012D digitizing information at parallel sampling intervals of 25, 50, 100-microns through aperatures of 25, 50, or 100-microns.

Currently hourly charges, subject to negotiation or change, are $57.37 for the first hour and $32.37 per hour for each hour thereafter.

For access information contact: Dr. B.A. Tschantz, 63 Perkins Hall, University of Tennessee, Knoxville, Tennessee 37916.

### MICROSCOPES FOR COSMIC RAY TRACKS

**Mississippi State University**

Six scanning microscopes equipped with large stages. They can be used to search for tracks in emulsions, plastics and crystal plates. They also can be used to measure the track range.

Faculty members, graduates and undergraduate students will be able to use the facility through special arrangements.

For access information contact: Dr. Poh Shien Young, Physics Department, Mississippi State University, State College, Mississippi 39762.

### MICROWAVE SPECTROMETER

**Mississippi State University**

Phase-stabilized-recording microwave spectrometer covering the region from 26-40 GHz.

Faculty and graduate students are eligible to use the facility through special arrangements.

For access information contact: Dr. R.L. Cook, Physics Department, Mississippi State University, State College, Mississippi 39762.

### MOBILE AMBIENT - AIR MONITORING VAN

**University of Alabama in Huntsville**

The mobile van contains instrumentation for measuring wind speed, wind direction, humidity, UV radiation, and ambient concentrations of hydrocarbons, carbon monoxide, carbon dioxide, methane, ozone, nitrogen oxides, and sulfur dioxide.

Demonstration of the van is free to regional agencies and institutions. There is a charge of $100 per day for use of the van for air quality measurements.

For access information contact: Dr. Kenneth E. Johnson, Director, University of Alabama in Huntsville, Huntsville, Alabama 35807.

## MULTI-LABORATORY COMPUTER CENTER

**The University of Alabama in Birmingham**

The laboratory has a specialized central computer/satellite computer system for acquiring and processing physiological information from experiments in the life sciences. The basic computers are a network of a central Sigma 7 and a Sigma 2.

The Center may be used by qualified scientists on a collaborative basis subject to availability of laboratory facilities in the UAB Medical Center. Users will be handled on an individual basis.

For access information contact: Dr. Josiah Macy, Jr., Director, Division of Biophysical Sciences, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

## MUSEUM

**Texas Tech University**

The building houses gallery areas, planetarium, classrooms, lecture hall, research laboratories, and collection storage for the areas of history, art, anthropology, and the natural sciences. The primary use is public visitation and providing factual information for students at all levels. The classrooms and research laboratories are primarily used by graduate students.

Faculty, organized groups and classes at all levels are eligible to use the facility. No fee is charged except for the reimbursement of operational costs.

For access information contact: Mrs. Betty Rhea Moxley, Program Supervisor, The Museum of Texas Tech University, Post Office Box 4499, Lubbock, Texas 79409.

## MUSEUM

**University of Arkansas**

The University Museum has extensive research collections in the following areas: Archeology, principally Arkansas, including nearly 7,000 whole pottery vessels; Mineralogy, major collection is H.D. Miser Arkansas quartz collection; Pattern Glass, approximately 1,700 pieces; Human Osteology, approximately 1,200 individuals; Oology, approximately 1,700 sets of bird eggs; Malacology, approximately 4,300 species; Paleontology, principally NW Arkansas, but with important species from elsewhere include Germany; Herpetology; and Ichthyology.

The collections may be studied on premises by interested scholars. In unusual circumstances some material may be formally loaned for study to scholars at other institutions. Prior arrangements should be made to insure availability of work space and staff assistance.

For access information contact: Dr. Charles R. McGimsey, III, Director, University of Arkansas Museum, University of Arkansas, Fayetteville, Arkansas 72701



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**MUSEUM**

**University of Florida**

The facility is the largest natural history museum in the South. The Department of Natural Science is responsible for the care and use of large systematic collections of preserved specimens of fishes, amphibians, reptiles, birds, mammals, mollusks, fossils, invertebrates and vertebrates, plus pertinent library holdings. The collections of fishes, amphibians, reptiles, and vertebrate fossils are the most important to science. Emphasis is on Florida, the neighboring southeastern United States and the Caribbean region. Zooarchaeological collections (organisms associated with human culture) are of special interest as are fossil holdings, and a newly established sound archive and laboratory in the bird range. The Department of Social Science is responsible for research collections in archaeology and ethnology which contain approximately 100,000 archaeological specimens from Florida, Southeastern United States, Middle America, and the Caribbean area; smaller collections in North American Indian ethnology and Florida history, facilities for visiting scholars research place.

Visiting qualified individuals may use the facilities by appointment and by request usually can borrow materials for study at their own institutions for limited periods.

For access information contact: Dr. J.C. Dickinson, Jr., Director, Florida State Museum, University of Florida, Gainesville, Florida 32611.

**MUSEUM**

**University of Tennessee**

The Frank H. McClung Museum contains exhibits of natural history, history and art. There are collections of Tennessee archaeological material, fine arts, history and natural history. The purpose of the museum is to provide teaching and research facilities for students, faculty and staff.

Faculty, students and research personnel are eligible to use the facility. Institutional loans are possible. The borrowing institution assume responsibility for shipping and security.

For access information contact: Director, Frank H. McClung Museum, University of Tennessee, Knoxville, Tennessee 37916.

**MUSEUM OF CLASSICAL ARCHAEOLOGY**

**University of Mississippi**

This is the largest and finest collection of Greek, Roman and Egyptian antiquities in the South and one of the dozen best such collections in colleges and universities in the United States.

Faculty, graduate and undergraduate students, and other interested individuals are eligible to use the facility. There are financial charges only for the cost of reproducing photographs and slides or taking special photographs.

For access information contact: Dr. Luch Turnbull, Department of Classics, Bondurant Hall, University of Mississippi, University, Mississippi 38677.

## MUSEUM OF GEOSCIENCE

**Louisiana State University**

Distinctive features include Paleontology, especially micro—foraminifera, ostracods, rudistids, research collections, type and locality collections; Archaeology—the best on materials of Lower Mississippi Valley, type and site collections for research.

Faculty, graduate students, and qualified researchers are eligible to use the facility.

For access information contact: Director, Museum of Geoscience, Louisiana State University, Baton Rouge, Louisiana 70803.

## MUSEUM OF NATURAL HISTORY

**The University of Alabama**

The museum has rich collections in several areas of anthropology, biology, and geology. The conchology collection, with nearly three quarters of a million fresh water and marine shells, is one of the most outstanding in the United States. There are extensive collections in mammal and fish specimens.

The museum is open to the general public at no charge.

For access information contact: Museum of Natural History, The University of Alabama, University, Alabama 35486.

## MUSEUM OF NATURAL SCIENCE

**Louisiana State University**

The museum contains the largest research collection of higher vertebrates in the South, numbering well over 100,000 cataloged specimens, with the fifth largest avian holdings among the university museums of the United States. The collection is particularly rich in the representations of the Neotropical forms and includes many type specimens.

Scientists at other institutions are welcome to visit the Museum at any time. Professional zoologists and graduate students can have any of our material that they need in their research sent to them free of charge.

For access information contact: Dr. George H. Howry, Director, Museum of Natural Sciences, Louisiana State University, Baton Rouge, Louisiana 70803.

## NUCLEAR LABORATORY

**Triangle Universities Nuclear Laboratory**

The facility, jointly staffed by North Carolina State University, the



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University of North Carolina at Chapel Hill, and Duke University, has a 0-35 MeV Cyclo-graaff. It is located at Duke University.

Faculty and graduate students are eligible to use the facility. No charge is made for "machine time" or use of ancillary equipment but all normal costs are to be paid by the visitor.

For access information contact: Dr. H. W. Newson, Director of TUNL, Department of Physics, Duke University, Durham, North Carolina 27706.

### NUCLEAR PHYSICS LABORATORY

**University of Georgia**
The facility contains a Van de Graaff with nano-second pulsing and terminal potential greater than 5 MV. It is equipped for research in neutron physics, charged particle physics, decay schemes, x-ray production and analytical applications.

Special arrangements will be considered for faculty members on an individual basis.

For access information contact: Dr. M. F. Steuer, Department of Physics and Astronomy, University of Georgia, Athens, Georgia 30602.

### NUCLEAR REACTOR FACILITY

**University of Virginia**
Included in the facility are the 2 MW University of Virginia Reactor (UVAR), a low power (100 watts) training reactor, a 70,000-curie Co-60 gamma irradiation facility, a hot-cell, a machine shop, an electronics shop, a low background counting room, a health physics laboratory, a time-share computer terminal, and a number of student laboratories.

There is a basic use charge for the 2 MW UVAR of $20 per hour.

For access information contact: Dr. J. L. Meem, Director, Reactor Facility, University of Virginia, Charlottesville, Virginia 22901.

### OBSERVATORY

**University of South Florida**
The observatory has a 26" Schmidt-Cassegrain reflector with about 10 m focal length, with a photoelectric photometer and a spectrograph. It also has a fully digitized two-screw Mann measuring machine for photographic plate.

Faculty members and graduate students are eligible to use the facility. Use will depend on availability.

For access information contact: Dr. E. J. Devinney, Director, USF Observation, University of South Florida, Tampa, Florida 33620.

**OBSERVATORY**

**University of Texas**
The McDonald Observatory contains 107" and 82" optical telescopes with both coude and cassegrain positions and instruments. Additional equipment includes 36" and 30" optical telescopes and a 16" fully steerable millimeter radio astronomy dish.

Astronomy Ph.D level faculty or research staff (occasionally advanced and experienced Ph.D. candidates) will be considered for access to the facility, particularly during bright-of-the-moon times. Users will be charged proportional operating expenses. Current approximate amounts: 107", $900/night; 82", $500/night; 36", $100/night; 30", $50/night.

For access information contact: Director, McDonald Observatory, Astronomy Department, University of Texas, 15.212 PMA Building, Austin, Texas 78712.

**OBSERVATORY**

**University of Virginia**
The Leander McCormick Observatory has a 26-inch long focus refractor suited principally for astrometric work plus a collection of 105,000 5 x 7 plates with this instrument. The plates are stored in a fireproof vault which houses the principal measuring equipment as well.

Qualified research scientists are eligible to use the facility. There will be no charge except when research to be done is sponsored.

For access information contact: Dr. Laurence W. Fredrick, Director, Astronomy Department, University of Virginia, Charlottesville, Virginia 22903.

**OBSERVATORY**

**Valdosta State College**
The facility consists of a 12" cassegrain telescope with photoelectric photometer, camera, and filar micrometer eyepiece. A filter wheel enables photometry to be done on the UBV system. A spectroscope is planned.

Faculty and students majoring in astronomy are eligible to use the facility.

For access information contact: Dr. Dennis W. Marks, Director, Planetarium and Observatory, Valdosta State College, Valdosta, Georgia 31601.

**OBSERVATORY**

**Vanderbilt University**
The facility is arranged around a 24-inch reflecting telescope which can be used as a Schmidt telescope for wide field photography with


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or without an objective prism. A photometer and a spectrograph are available.

Faculty and graduate students are eligible to use the facility. Charges are approximately $150 per night of usage.

For access information contact: Professor Arnold Heiser, Director of the Arthur J. Dyer Observatory, Vanderbilt University, Nashville, Tennessee 37240.

## OBSERVING STATION

**University of Virginia**

There are three telescopes, a 10-inch astrograph, a 32-inch cassegrain reflector, and a 40-inch modified Schmidt astrometric reflector. A darkroom, electronics shop, instrument shop, and two bunkrooms are available. Single and dual channel photometer, plus spectrograph are available for the 32-inch telescope.

Qualified research scientists are eligible to use the facility. There is no charge except when research to be done is sponsored.

For access information contact: Dr. Laurence W. Fredrick, Director, Astronomy Department, University of Virginia, Charlottesville, Virginia 22903.

## OCEANOGRAPHIC LABORATORY

**Nova Laboratory**

Available in connection with the laboratory is a plane for measurement work and boats for current work.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. William Richardson, Nova University, 3301 College Avenue, Ft. Lauderdale, Florida 33314.

## OCEANOGRAPHY AND METEOROLOGY LIBRARY

**Texas A&M University**

The Oceanography and Meteorology Working Collection certainly must be considered uncommon. The library also contains the archives of teletypes and facsimile data (five years of the former, three of the latter—to be extended gradually to 10 years and 5 years, respectively).

Faculty and graduate students are eligible to use the facility. The Working Collection is available through inter-library loan or by letter request to librarian. Oceanography and Meteorology Working Collection; the Meteorological Archives, by individual letter arrangements with Department of Meteorology.

For access information contact: Head, Department of Meteorology, Texas A&M University, College Station, Texas 77843.

## OIL FIELD MAP COLLECTION

**The University of Southwestern Louisiana**

The F. E. Zemmer Collection is a collection of oil field maps and papers of Louisiana. A very extensive file which is used from time to time by oil men of this area. This is one of three complete sets in existence.

Interested persons can use the collection in the Louisiana room of Dupre Library.

For access information contact: Curator, F. E. Zemmer Collection, Dupre Library, The University of Southwestern Louisiana, Lafayette, Louisiana 70501.

## PHYSICS PRE-PRINT LIBRARY

**University of Maryland**

One of four in the world permitting scholars in physics to study works in pre-publication and exchange information about them.

Interested persons are welcome to use the library.

For access information contact: Department of Physics, University of Maryland, College Park, Maryland 20742.

## POLLUTION DETECTION FACILITY

**Murray State University**

The facility consists of a completely interfaced gas chromatograph—mass spectrometer—computer system capable of separation and characterization of organic pollutants (compounds).

Faculty members, graduate students and undergraduates who have been properly checked out on the equipment are eligible to use the facility. Small charges for expendable supplies are anticipated.

For access information contact: Dr. Pete Panzera, Chairman, Department of Chemistry, Murray State University, Murray, Kentucky 42071.

## POLYTHERMOSTATS

**University of Miami**

Four Polythermostats are available; three units have capacity for duplicate samples (test tube size or smaller) to be maintained at thirty different, constant (+ 0. 1°C) temperatures; the increments between adjacent samples variable from 0.05°C to 3°C, over a range from −10°C to + 80°C. There is one additional unit with 19 duplicate sample wells.

Faculty, graduate students, and technicians are eligible to use the facility. There is no charge; one or more units available for up to four weeks at a time.

For access information contact: Dr. W. Drost-Hansen, Professor, Department of Chemistry, University of Miami, Coral Gables, Florida 33124.

## RADIATION RESEARCH FACILITIES

**University of Mississippi**

The facilities include a 3 MeV Electron Accelerator, Dynamitron, Gamma radiation, steady-state (Cu or W, Bremstralung) with a dose rate of 1 to 60 million r/hr and a direct electron beam, 0.001 micro-amp to 10 milli-amp beam current at 1.5 to 2.5 MeV and a target temp control −150 to + 250°C, inert atmosphere or vacuum control on target, nano-second pulsing of electron beam and UV-visible detection of transient intermediates which will be available in the spring of 1974. There is a Co-60 Gamma Irradiator with a dose rate of 1 million r/hr, steady-state, sample temperature variable −196 to + 250°C, sample size 2" x 5", continuous flow of sample into irradiator as liquid or gas is also available.

The facility is available as scheduling permits. Nominal charges.

For access information contact: Dr. Theodore J. Klingen, Director, Radiation Research Section, Institute of Applied Science and Mathematics, University of Mississippi, University, Mississippi 39677.

## RADIO ASTRONOMY OBSERVATORY

**University of Texas**

356 MHz four-square mile radio astronomy array is capable of locating position of radio sources with arcsecond accuracy.

The system is very specialized and sophisticated; under some carefully arranged conditions it might be possible for an advanced electrical engineering, physics or astronomy staff member or graduate student who is interested in making a career in radio astronomy to work at the observatory in order to gain experience. Such a visitor should be prepared to cover his own expenses.

For access information contact: Director, UTRAO, Astronomy Department, University of Texas, 15.2.2 PMA Building, Austin, Texas 78712.

## 30-INCH REFLECTING TELESCOPE

**University of Florida**

The telescope is used in the Newtonian or Cassegrain configurations with focal ratios of f/4 and f/16 respectively. It is fully equipped for photography at either focus. Several photoelectric photometers and a spectrograph are used at the Cassegrain focus. Ancillary equipment includes an iris photometer, the Palomar Sky Survey, a spectrocomparator, and darkroom facilities including equipment for measuring plate sensitivity and spectral response. Dormitory facilities are provided at Rosemary Hill, which is 27 miles from the campus. An 18-inch Ritchey-Chretien telescope at the observatory is less heavily scheduled and may be available on shorter notice.

Faculty and graduate students are eligible to use the facility. Visitors will pay for supplies and computer time.

For access information contact: Dr. F. B. Wood, Director, Rosemary Hill Observatory, Department of Physics and Astronomy, University of Florida, Gainesville, Florida 32611.

## REMOTE SENSING LAPORATORY

**University of Georgia**
Equipment in the laboratory includes a Kelsh Plotter with H. Dell Foster digitizing equipment, Bausch and Lomb zoom transfer scope, densitometer, I²S additive viewer, coordinatograph, Saltzmann reflecting projector, copy camera (20 x 24 inch negative format), Kern theodolite, tellurometer (model CA-1000).

For access information contact: Dr. Roy Welch, Department of Geography, University of Georgia, Athens, Georgia 30602.

## RESEARACH VESSEL: ALAMINOS

**Texas A&M University**
180' research vessel; 6,000 mile range. Only one between Miami and San Diego. 170' vessel now under construction scheduled for delivery in Fall, 1973, similar capabilities as 180' R/V Alaminos.

One-three scientists per cruise from other institutions can be accommodated.

For access information contact: Dr. R. A. Geyer, Head, Department of Oceanography, Texas A&M University, College Station, Texas 77843.

## RESEARCH VESSELS

**University of Miami**
"COLUMBUS ISELIN" has a length of 170', beam 36', draft 15', speed 13.5 knots; and an endurance of 35 days. There are accommodations for a crew of 12 as well as space for 13 scientists. Two hydraulic cranes and two hydraulic A-frames are located on the main deck. A main trawl winch and two hydrographic winches are located on the upper deck. Electronic equipment includes twin radar units, single side band, AM, VHF radio, precision echo sounders, depth sounder, Sperry Gyro system, Omega navigation system, RDF and Loran.

"GILISS" has a length of 280'; beam 37', draft 15', speed 12 knots; and an endurance of 12,000 nautical miles. There are accommodations for a crew of 22 as well as space for 16 scientists. Equipment consists of Western Gear, Markey and Bl winches, A-frames, Sperry Gyro system, anemometer, PDR, fathometers, Loran, RDF, and satellite navigation equipment.

Faculty and graduate students are eligible to use the facilities. Through membership in the University National Oceanographic Laboratory System, scientists are offered opportunities to use the vessels.

For access information contact: Dr. James Gibbons, RSMAS Marine Department, 10 Rickenbacker Causeway, Miami, Florida 33149.

## RESEARCH VESSELS

**University of South Alabama**
"Alice" is a twin screw diesel equipped for offshore navigation; 83' overall, draws 5-1/2' water. It has sleeping accommodations for 10 and special wenches for taking deep underwater samples.

"Planula" is a 40' double end surf rescue boat drawing 4' water. It is a single diesel engine with bunks for two, equipped for minimal coast wise navigation. There are two full-time employees, captain and mate.

Both vessels may be rented.

For access information contact: General Wilson Hawkins, 307 University Drive, University of South Alabama, Mobile, Alabama 36608.

## SCIENCE TEACHING CENTER AND THE INTERNATIONAL CLEARINGHOUSE

**University of Maryland**
The facility is an internationally-oriented science education reference library that includes the NSF/AAAS-sponsored International Clearinghouse on Science and Mathematics Curricular Development collection which produces the 900-page biennial survey report. This is the most comprehensive collection of science and mathematics courses of study world-wide and additionally has samples of the laboratory equipment on many of the American projects.

Faculty, graduate and undergraduate students, and other qualified individuals are eligible to use the facility. There is no charge. The biennial International Clearinghouse Reports are available at $2 per copy and the three IS-2 Manuals at $2 per set.

For access information contact: Dr. J. David Lockard, Director and Professor, Science Teaching Center, University of Maryland, College Park, Maryland 20742.

## SEISMIC OBSERVATORY

**Georgia Institute of Technology**
The facility records continuously the movement of the earth caused by earthquakes. Three component (N. E. Vertical) seismograms are obtained daily from short period (2-0.1 seconds) and long period (5-100 seconds) instruments. The observatory cooperates with uses for distribution of the data.

All individuals or organizations may purchase seismograms.

For access information contact: Director, ATL Seismic Observatory, School of Geophysical Sciences, Georgia Institute of Technology, Atlanta, Georgia 30332.

## SEISMOGRAPH OBSERVATORY

**Virginia Polytechnic Institute and State University**
This facility is a part of a world wide net of 120 such facilities. Only

two of these facilities are located in the Southeastern part of the United States. This equipment is matched in order to produce data which are directly comparable.

This facility is used for instruction and research at both the undergraduate and graduate level. No special conditions or charges for using the facility are anticipated.

For access information contact: Dr. Gilbert A. Bollinger, Department of Geological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## SEISMOLOGICAL OBSERVATORY

**University of Mississippi**

The facility consists of a laboratory for research and service which is located twenty kilometers N/NE of the campus for continuous monitoring of ground vibrations from natural and man-made sources. Current instrumentation provides capability to record all moderate and major earthquakes and/or underground nuclear tests throughout the globe, all "felt" earthquakes in the United States, and numerous "unfelt" earthquakes within 300 km (200 miles) of the facility.

For access information contact: Dr. Fred E. Followill, Director, Department of Geological Engineering, University of Mississippi, University, Mississippi 38677.

## SEISMOLOGICAL OBSERVATORY

**University of South Carolina**

The facility provides seismological data from a network of USGS seismograph stations along with two seismographs of USC which are radio telemetered to the Geology Department and recorded on three heliocorders, a develocorder and magnetic tape (belonging to the United States Geological Survey). The object of the seismic network is to study the seismicity of the state.

Faculty, graduate and advanced undergraduate students are eligible to use the facility. There is no charge.

For access information contact: Dr. P. Talwani, Department of Geology, University of South Carolina, Columbia, South Carolina 29208.

## SEISMOLOGICAL STATION

**University of North Carolina at Chapel Hill**

A building off-campus houses the seismograph, used to record earth vibrations. Data are recorded on film and sent by wire to a rotating drum in the Geology Department.

Faculty and graduate students interested in using the facility for research are welcome. Conditions for using the facility will be negotiated.

For access information contact: Dr. John M. Dennison, Chairman of the Department of Geology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514.

### SHOCK TUBE FACILITY

**University of Maryland**
A facility for the study of spectra of atoms and ions of astrophysical interest. This facility may be used by scientists in the region.

The only criterion is an initial level of laboratory competence and a commitment to thorough and objective experimental measurements apropos of astrophysics. Salary support will be mandatory. In addition, facility-use support at a level of $800 per user per month will be very helpful in view of rising costs.

For access information contact: Dr. Thomas D. Wilkerson, Institute for Fluid Dynamics and Applied Mathematics, University of Maryland, College Park, Maryland 20742.

### SPACE RADIATION EFFECTS LABORATORY

**College of William and Mary**
The laboratory houses three particle accelerators, the largest of which is a 600,000,000 electron volt syno-cyclotron. SREL is administered through the Research Campus by the College of William and Mary under contract with NASA and is used by scientists at universities throughout the nation. Research being conducted at the site includes nuclear chemistry, radiation biology, and radiation effects on materials.

Proposals will be considered by a committee of regional scientists.

For access information contact: Space Radiation Effects Laboratory, College of William and Mary, Williamsburg, Virginia 23185.

### SPECTROGRAPHIC LABORATORY

**University of Kentucky**
Direct current arc emission spectrographic facility including laser microprobe apparatus oriented to geochemical application. Includes a number of spectrographs together with supporting equipment.

The facility is available for faculty or graduate students willing to undergo a short period (about one week) of instruction and training. The laboratory should be reimbursed for direct costs of expendable supplies used. Most jobs can be performed for less than $100.

For access information contact: Dr. W. H. Dennen, Department of Geology, University of Kentucky, Lexington, Kentucky 40506.

### SPECTROSCOPY LABORATORY

**Old Dominion University**
Extensive vacuum ultraviolet and visible spectroscopy equipment which includes a McPherson model 225 vacuum u.v. normal incidence one meter monochromator, model 218 0.3 meter vacuum nomochromator, model 235 0.5 meter Seya-Naincoka vacuum u.v. monochromator, a Jarrel Ash one meter Ebert Spectrograph, and a 0.5 meter Ebert.

Detection electronics including P.A.R. model 220 lock-in amplifier, HR-8 lock-in, CW-1 Boxcar Integrator, and associated electronics and recorders are also available.

Faculty members from other educational institutions are eligible to use the facility. Conditions for using the facility will be arranged on an individual basis.

For access information contact: Dr. George Ofelt, Department of Physics, Old Dominion University, Norfolk, Virginia 23508.

**SPIRAL READER**

**University of Tennessee**

The only facility of its kind in the eastern United States, it measures events photographed on Bubble Chamber Film taken at the various national laboratory high energy accelerators. It is capable of measuring and putting on tape 100 scanned events per hour. It is operated on a 24 hour s .hedule by a combination of University of Tennessee and Oak Ridge technicians and engineers. Tapes are processed on the Oak Ridge IBM computers.

Sharing will have to be negotiated. Any major use would require compensation for costs, or collaboration.

For access information contact: Dr. William Bugg, Chairman, Physics Department, University of Tennessee, Knoxville, Tennessee 37916.

**TEXTILE RESEARCH LABORATORY**

**Texas Woman's University**

The facility is concerned with the performance of chemically finished textile fabrics in end-use products with emphasis on fabrics composed principally of cotton and of blends of cotton, wool, and mohair with man-made fibers. The facility conducts end-use oriented flammability studies on wearing apparel, mattresses, and blankets; provides opportunities for graduate students to fulfill research requirements for advanced degrees; conducts seminars, symposiums, and workshops throughout the academic year for the benefit of graduate students and for those involved in state institutional detergency programs.

Faculty and graduate students are eligible to use the facility. Any financial charges will be established by negotiation.

For access information contact: Dean of the Graduate School, Box 22479, TWU Station, Denton, Texas 76204.

**THERMAL NEUTRON CAPTURE GAMMA-RAY FACILITY**

**Georgia Institute of Technology**

A beam of thermal neutrons is extracted from the Georgia Tech Research Reactor having a flux of about $6 \times 10^6$ neutrons $cm^2$ sec. Gamma Ray detectors are available for the study of radiation following capture of neutrons in a sample. Two parameter coincidence data recording equipment is also available.

Faculty and graduate students are eligible to use the facility. Radiation Monitoring by Health Physics is required along with an appropriate training session in the utilization of the equipment. The charge for one hour of neutron use at 1 Megawatt power level is $10.

For access information contact: Dr. D. A. McClure, School of Physics, Georgia Institute of Technology, Atlanta, Georgia 30332.

### TIDAL GRAVITY METER

**Virginia Polytechnic Institute and State University**
This facility measures the amount of gravity change on the surface of the earth related to vertical movement which results from lunar and solar gravity forces. Changes in gravity are measured to a few parts to $10^9$. This is the only such facility in the Southeast.

Faculty, graduate and undergraduate students who are interested in the relationships that exist between the ocean tides and their effect on earth movement are eligible to use the facility.

For access information contact: Dr. E. S. Robinson, Department of Geological Sciences, 1051 Derring Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virignia 24061.

### TRAINING VESSEL: TEXAS CLIPPER

**Texas A&M University**
This is the only such vessel in the South available for maritime training and instruction.

Use will depend on planned endeavors. No specific limitations other than non-interference with the training process, and particularly so during summer training cruises. Students may enroll in the Academy License Option for $5 per semester hour with a minimum of $60 per semester. High school graduates may participate in the summer training program at sea.

For access information contact: Dean, College of Marine Sciences and Maritime Resources, Texas A&M University, Pelican Island, Galveston, Texas 77550.

### TRITIUM LABORATORY

**The University of Georgia**
The Geochronology Laboratory has the capability and the instrumentation for measuring low levels of radioactive hydrogen (tritium). Tritium measurement capabilities in this laboratory are unique to the State of Georgia and is one of two operational laboratories in the Southeast.

Research personnel, university and college faculty members, graduate students and industrial representatives are welcomed to use the facility with adequate advanced notification. Work carried out at the laboratory will be under the supervision of laboratory personnel. A

financial charge will be made for chemicals, laboratory supplies, and age dating of samples (approximately $100.00 for each radiocarbon age dating sample).

For access information contact: Dr. John E. Noakes, Director, Geochronology Laboratory, The University of Georgia, Athens, Georgia 30601.

## VAN DE GRAAFF ACCELERATOR

**University of Florida**
The HVEC Model KN-4000 Van de Graaff Accelerator provides DC beams of protons, deuterons, $^{3}He+$ and $^{4}He+$ having energies up to 4.5 MeV. A cross-field analyzer provides convenient operation with doubly charged helium ions. A terminal pulsing system is also available.

Faculty and graduate students are eligible to use the facility. Collaboration with staff members is encouraged. User group charges will be negotiated.

For access information contact: Dr. H. R. Weller, Department of Physics, University of Florida, Gainesville, Florida 32611.

## VAN DE GRAAFF ACCELERATOR LABORATORY

**Florida State University**
The laboratory contains Super FN Tandem Van De Graaff Accelerator, EMR 6130 on-line Computer, DC 6024/3 Live Data Analysis Computer, and Isotope Separator.

Faculty members and graduate students interested in collaborating with on-going research groups are eligible to use the facility. User group service charges will be negotiated.

For access information contact: Dr. Robert H. Davis, Principal Scientist, Tandem Van De Graaff Accelerator Program, Department of Physics, Florida State University, Tallahassee, Florida 32306.

## VAN DE GRAAFF ELECTROSTATIC NUCLEAR ACCELERATOR

**University of Kentucky**
An electrostatic accelerator which provides fast protons, deuterons, alpha particles, and neutrons for use in nuclear physics experiments is available. It is equipped to pulse and bunch the beam so that short burst of about $1 \times 10^{-9}$ seconds are available. Associated equipment: Particle detectors, neutron detectors, time-of-flight system, many electronic modules, a PDP-8/1 computer. Suitable for atomic physics experiments and for the preparation of short half-life radioisotopes, as well as nuclear physics work.

Requests from faculty members at other institutions would be favorably considered. Present policy stipulates a charge per hour for the use of the accelerator. Exception might arise for a joint project of mutual advantage.

For access information contact: Dr. Bernard D. Kern, Department of Physics and Astronomy, University of Kentucky, Lexington, Kentucky 40506.

### VIBRATION LABORATORY

**Rice University**
Facilities include Vibration Table with 1500 force/lbs., sine; 1380 force/lbs., random; bare table maximum: 94 g's; 16 lb. armature; and frequency range: 5 to 4000 Hz.

Faculty members are eligible to use the facility. The financial charge will be $10.00 per hour.

For access information contact: Dr. R. F. Stebbings, Chairman, Department of Space Science, Rice University, Houston, Texas 77001.

### VISCOMETERS

**University of Miami**
Two high precision viscometers are available. The relative precision of flowtime measurements is approximately five parts per million. The temperature constancy is + 0.0002°C. There is digital read-out and printing of flowtimes and temperature. The useful range is + 5°C to 70°C.

Faculty, graduate students, and technicians are eligible to use the facility. There is no charge.

For access information contact: Dr. W. Drost-Hansen, Professor, Department of Chemistry, University of Miami, Coral Gables, Florida 33124.

### WATER CHEMISTRY RESEARCH LABORATORY

**Ouachita Baptist University**
The laboratory is equipped with modern water analysis equipment including atomic absorption spectrometer, specific ion electrodes, boat for field sampling, and equipment for taking water, mud, and plankton samples.

Individuals using the facility should be knowledgeable of equipment and procedures. Arrangements will be made on an individual basis.

For access information contact: Dr. Joe F. Nix, Department of Chemistry, Ouachita Baptist University, Arkadelphia, Arkansas 71923.

### X-RAY AND NEUTRON DIFFRACTION FACILITIES

**Georgia Institute of Technology**
The facilities include: (1) computer compatible x-ray powder diffractometer with monochromator which considerably increases sensitivity and position in powder diffractometry; (2) automated x-ray pole figure device in which the final output is computer-drawn pole figures; (3) x-ray diffraction topography using several techniques plus

closely related SID; (4) neutron diffraction including powder and single crystal, triple axis, low temperature, and magnetic.

Charges will be related to materials used and personnel time required.

For access information contact: Dr. R. A. Young, School of Physics, Georgia Institute of Technology, Atlanta, Georgia 30332.

## X-RAY CRYSTALLOGRAPHIC EQUIPMENT

**Rice University**
Facility is used for single crystals of large macromolecules.

Faculty members are eligible to use the facility. A financial charge is not anticipated.

For access information contact: Dr. G. J. Schroepfer, Chairman, Department of Biochemistry, Rice University, Houston, Texas 77001.



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## CANADIAN STUDIES CENTER

**Duke University**

The facility, financed by the Department of Health, Education and Welfare and the Donner Foundation, was created to extend graduate work on Canada into the undergraduate field and service neighboring universities and colleges.

Faculty, graduate and undergraduate students are eligible to use the facility. Arrangements can be made for visiting Canadian scholars to the Center to lecture at other institutions in the southeast. Travel expenses can be provided by the Center; hospitali'y and a modest honorarium should be provided by the host institution.

For access informatin contact: Dr. Richard A. Preston, Director, Canadian Studies Program, 237 Social Sciences, Duke University, Durham, North Carolina 27706.

## CENTER FOR ADVANCED INTERNATIONAL STUDIES

**University of Miami**

The Center is a separate facility on the campus of the University of Miami occupying at the present time about 12,500 square feet of office space. Administrative facilities and research offices are available for academic and research activities associated with the Center. The Center is concerned with a graduate program of International Studies including two Ph.Ds, two Doctor of Arts, and five M.A. programs, as well as a research program involving for the most part Latin-American and Soviet Studies.

Individuals actively involved in Center activities are eligible to use the facility.

For access information contact: Dr. Clyde C. Wooten, Associate Director, Center for Advanced International Studies, 1217 Dickinson Drive - Building 49, Coral Gables, Florida 33124.

## CENTER FOR CHILD DEVELOPMENT

**University of Miami**

The objectives of the Center are to interdisciplinarily train graduate and undergraduate students to work in the area of child development, thus providing needed manpower; to diagnose and treat children with mental retardation and other developmental disabilities; to conduct basic and applied research related to mental retardation and other developmental disorders. The Center is presently staffed by forty full-time University of Miami faculty members.

Faculty and graduate students are eligible to use the facility.

For access information contact: Dr. Robert S. Stempfel, Jr., Director, Center for Child Development, University of Miami, Box 520006, Miami, Florida 33152.

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## CENTER FOR LATIN AMERICAN STUDIES

**University of Florida**

Special programs or facilities include Curriculum Development for Latin American Studies, Latin American Data Bank, Latin American Cartographic Research Laboratory, Aymara Language Program, Latin American Studies Association, program in living experience with the Spanish Language and Colombian Culture at Universidad de los Andes, Bogota, Colombia, Communication Research Center, Urban and Regional Development Center, Latin American Library and Map Collection, Latin American Documents Project, and Latin American Demography Program.

Faculty and graduate students are eligible to use the facility.

For access information contact: Director, Center for Latin American Studies, 319 Grinter Hall, University of Florida, Gainesville, Florida 32611.

## CENTER FOR LATIN AMERICAN STUDIES

**Vanderbilt University**

The principal research resources of the Center are special library collections with strong holdings on Brazil, Colombia, Chile, and Venezuela.

Faculty, graduate students, and researchers are eligible to use the facility. There is no charge for use of the materials on campus; users are subject to conditions of the Joint University Libraries.

For access information contact: Dr. William Nicholls, Director, Box 1806, Station B, Vanderbilt University, Nashville, Tennessee 37203.

## CENTER FOR THE STUDY OF LEARNING

**Texas Woman's University**

The facility is concerned with reading process, visual and auditory discrimination, modeling technique for oral reading, skills of reading comprehension, the relationship of reading readiness, psycholinguistic abilities, and intelligence to reading achievement, and development of experimental tests for phonics. Also, operates a clinic for diagnostic and remedial reading services for elementary and junior-senior high school students, conducts surveys of public school reading programs, provides training for undergraduate and graduate students specializing in elementary or secondary reading, and conducts demonstrations for diagnostic testing and the teaching of all basic reading skills for grades 1-12.

Faculty and graduate students in situations covered by existing consortium agreements or by special arrangements are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dean of the Graduate School, Box 22479, TWU Station, Denton, Texas 76204.



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## CENTER FOR THE STUDY OF NEW COMMUNITIES

**Virginia Polytechnic Institute and State University**
The Center for the Study of New Communities at Reston, Virginia, is administered by the College of Architecture. It provides an opportunity for faculty and students from the University and from Virginia's other public institutions of higher learning to focus attention on the urgent problems of urban development. The Center's purpose is to contribute to understanding of the new communities and urban development process through research, conferences and service.

Urban scholars may utilize the facility for urban studies.

For access information contact: Professor Joseph Intermaggio, Acting Director, Virginia Polytechnic Institute and State University, Extension Service, Reston, Virginia 24061.

## CENTER FOR THE STUDY OF PUBLIC CHOICE

**Virginia Polytechnic Institute and State University**
The primary objective of the Center is to encourage research and scholarship in public choice. It is the only study center specifically for public choice in existence. Through its publications and otherwise, the Center provides channel for an international exchange of ideas and results in the field of public choice.

Faculty and graduate students from any area involving public choice are welcome to visit the Center and participate in its activities.

For access information contact: Dr. James M. Buchanan, Center for Public Choice, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## CENTER FOR URBAN AND REGIONAL STUDIES

**Virginia Polytechnic Institute and State University**
The Center affords a research and service facility for interdisciplinary investigations of the human environment. As the research, public service and continuing education arm of the College of Architecture, the Center provides an opportunity to participate in research projects in the area of urban design, comprehensive planning, resources planning and public management.

For access information contact: Dr. John Dickey, Director, The Center of Urban and Regional Studies, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

## CENTER FOR URBAN STUDIES

**The University of Alabama in Birmingham**
The primary activities of the Center are teaching and research on the development, functions, and potentialities of the city. The Center also carries out a program of technical assistance to community groups and is developing a program of continuing education.

The Center's resources can be used by undergraduates, graduate students and faculty members. Projects requiring significant staff time are expected to be on a contract basis.

For access information contact: Edward S. LaMonte, Director, Center for Urban Studies, The University of Alabama in Birmingham, Birmingham, Alabama 35294.

## CHILD DEVELOPMENT CENTER

**Madison College**

The Center provides a variety of services. Included are diagnostic services of several kinds, education consultation, learning materials consultation, remediation, and guidance and counseling services. Specialized services are offered to handicapped children, to professional educators, and others working with the handicapped.

Faculty, graduate students, and other qualified individuals are eligible to use the facility.

For access information contact: Director, Child Development Center, Madison College, Harrisonburg, Virginia 22801.

## CHILD DEVELOPMENT CENTER

**University of Tennessee**

There are opportunities for interdisciplinary training in mental retardation and other developmental disorders of childhood as related to nutrition. The only other facility offering such training in nutrition is in Seattle, Washington.

Faculty, graduate students, and qualified professionals in this field are eligible to use the facility.

For access information contact: Dr. Mary Ann Smith, Child Development Center, 711 Jefferson Avenue, Memphis, Tennessee 38105.

## CHUCALISSA INDIAN VILLAGE AND MUSEUM

**Memphis State University**

This is a prehistoric Indian town and museum operated by Memphis State University as a research and training facility. The archaeological development includes an excavation site and biological field station; indoor and outdoor archaeological exhibits are provided. Nine houses have been reconstructed around the plaza from archaeological and ethnohistoric data. Two open excavation areas are roofed over, one illustrating stratigraphy and the other late Mississippi burial customs. A museum containing a lecture hall, research facilities, and exhibits is adjacent to the site.

Faculty and graduate students are eligible to use the facility. Arrangements will be made on an individual basis.

For access information contact: Dr. Gerald P. Smith, Curator, Chucalissa Museum, 1987 Indian Village Drive, Memphis, Tennessee 38109.

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## COMPUTER-CONTROLLED LANGUAGE TRAINING

**Georgia State University**

This laboratory investigates the acquisition of language-relevant behaviors in nonhuman primates. It has produced a totally automated language training technology and has revealed substantive language capabilities in the chimpanzee. In the near future, it is anticipated that the methods of this project will be applied to the benefit of children who, for various reasons, find language acquisition highly prolematical.

For access information contact: Dr. Duane M. Rumbaugh, Chairman, Department of Psychology, Georgia State University, Atlanta, Georgia 30303.

## CRISIS INTERVENTION CENTER

**Louisiana State University**

A campus-community cooperative effort, the Center includes several components: 1) 24 hour telephone crisis intervention and information referral, available parish wide (2,000 calls per month)—Crisis counselors are student and community volunteers, trained and screened, 2) evening phone extension program at Southern University to train Southern students for peer counseling, organizational consultants, 3) training consultants for basic and international link; two peer counseling programs at LSU, and 4) mental health education—campus, community.

Faculty, graduate students, and other interested individuals are eligible to use the facility. The Center is available for consultation to other universities. Charges will depend on the financial situation of the requesting institution.

For access information contact: Dr. Myron G. Mohr, Center Director, Student Health Service, Louisiana State University, Baton Rouge, Louisiana 70808.

## EARLY CHILDHOOD EDUCATION CENTER

**Jackson State College**

Carabo-Cone Music Method is used to develop musical knowledge and appreciation. Conversational French is taught by a person whose native language is French. Children come from cross-cultural, socio-economic backgrounds. The eclectic approach is used in planning learning activities. Emphasis is placed on activities which foster foundational learnings. There are individualized experiences in nursery-kindergarten teaching and teaching primary grades (k-3), which focus on curriculum evaluation or behavior research.

Faculty, graduate and undergraduate students are eligible to use the facility. There is no charge.

For access information contact: Mrs. Lottie W. Thornton, P.O. Box 17093, Jackson State College, Jackson, Mississippi 39217.

## EDUCATIONAL RESOURCES CENTER

**Hampton Institute**

The Center began in the fall of 1972 as an attempt to include under one directorship and in one location all those non-academic areas which affect the lives of students. Several of the present projects were designed with the idea of presenting models. Campus workshops on improvement of college teaching should result in publishable materials. Practical experiments concerning curriculum development for special groups should also prove interesting to educators. The spring National Conference on Testing in Education and Employment should have far reaching implications.

The director of the Educational Resources Center and all members of the Educational Resources Center Council will be happy to share their philosophy and experiences concerning the preliminary planning, organization and development of the Educational Resources Center.

For information contact: Dr. James M. Griffin, Director, Educational Resources Center, Hampton Institute, Hampton, Virginia 23368.

## ETHNIC-AMERICAN ART-SLIDES LIBRARY

**University of South Alabama**

This collection contains approximately 5,000 color slides of various types of Afro-American, Mexican American and American Indian art objects. This collection may be purchased in whole or in part. Interested scholars may use this collection in connection with their research.

Subject to individual negotiation.

For access information contact: Professor James Conlon, Art Department, University of South Alabama, Mobile, Alabama 36608.

## FAMILY STUDY PROGRAM AND LABORATORY

**Georgia State University**

The purpose of the program is to train psychologists at the doctoral level to become leaders and workers in the area of family study. A unique laboratory provides for computerized recording of communications between family members and the play activities of children.

For access information contact: Dr. Luciano L'Abate, Department of Psychology, Georgia State University, Atlanta, Georgia 30303.

## FOREIGN BROADCAST INFORMATION SERVICE REPORTS

**University of South Carolina**

The publication provides translations of foreign language broadcasts especially from Communist controlled states. The Institute of International Studies receives the complete worldwide service covering the Far East, USSR and Eastern Europe, Latin America, Middle East, plus the daily White Book.



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Faculty and graduate students undertaking research on international relations are eligible to use the facility. The facility is available without charge to faculty of institutions having reciprocal arrangements with the University of South Carolina.

For access information contact: Professor Bruce Marshall, Director of Research, Institute of International Studies, University of South Carolina, Columbia, South Carolina 29208.

### INFANCY LABORATORY

**Georgia State University**
In cooperation with Grady Hospital, an Infancy Laboratory functions in the interests of determining the behavioral/sensory capabilities of the human newborn child. Also, detailed attention is given to the nature and quality of the mother-infant interactional patterns and to ways in which the mother can learn "better mothering." Problems of care peculiar to the premature infant are likely to receive particular attention for study within the months of the immediate future.

For access information contact: Dr. Josephine V. Brown, Department of Psychology, Georgia State University, Atlanta, Georgia 30303.

### INSTITUTE OF COMMUNITY AND AREA DEVELOPMENT

**The University of Georgia**
The Institute of Community and Area Development is a jointly staffed 28-man team which is a public service unit of the University of Georgia aimed at bringing the competencies of the University to bear on the problems of growth and adjustment in Georgia communities. The Institute is also interested in regional research and studies on community and area development. Fields dealt with include business and industry, the arts, recreation, public health, safety education, data systems in local government, public leadership development, governmental structure and administration, adult education, land use, housing, sociology, geology, local governmental training programs, law enforcement and environmental design.

Faculty members, particularly joint-staffed personnel and their associates may use the facility. Limitations in using the facility will be determined by budget, personnel, space, and maintenance of work area and equipment.

For access information contact: Dr. E. E. Melvin, Director, Institute of Community and Area Development, The University of Georgia, Athens, Georgia 30601.

### MIDDLE AMERICAN RESEARCH INSTITUTE

**Tulane University**
The Institute is devoted to multidisciplinary research, education, and public service related to Mexico and Central America.

The collections of the institute are available at no charge for study by

qualified visiting scholars and graduate students. Facilities such as private office space do not exist at this time.

For access information contact: Dr. Robert Wauchope, Director, Middle American Research Institute, Tulane University, New Orleans, Louisiana 70118.

## MONT CHATEAU

**West Virginia University**
Mont Chateau Lodge is leased by West Virginia University from the State Department of Natural Resources and operated as an off-campus Continuing Education Center as well as a State Park and Lodge. Mont Chateau offers lodging, recreational, dining and conference facilities. 55 guest rooms, two dining rooms, conference-classroom complex, recreation room.

Faculty and students of other institutions are eligible to use the facility under the same financial arrangements for WVU faculty and students. There will be charges for meals and lodging, but no charges for conference meeting rooms for groups using lodging and facilities.

For access information contact: Wilfred C. Burgie, Manager, Mont Chateau Lodge, West Virginia University, Morgantown, West Virginia 26506.

## MOTOROLA PUPILARY RESEARCH LABORATORY

**Middle Tennessee State University**
Encompassing scarce equipment, this facility permits simultaneous video-screening and graphical recording of involuntary pupil dilation and contraction to controlled social, political, economic, historic, symbolic, and other psychological stimuli. The laboratory maintains research exchange with Medford, Massachusetts central file.

Limitations in using the facility will be determined by budget, personnel, space, and maintenance of work area and equipment.

For access information contact: Department of Psychology, Middle Tennessee State University, Murfreesboro, Tennessee 37130.

## MOUND STATE MONUMENT AND PARK

**The University of Alabama**
Two excavated Indian burial groups, and a restored temple are among the interesting features. The 320-acre tract which comprises the monument area has 40 "temple mounds." These were a part of the Mississippian Indian culture. One of these temples has been restored, and life-sized models are displayed conducting religious ceremonies. The museum contains two burial groups, as well as numerous artifacts showing the history of the Indians in Alabama.

The normal admission charge may be waived for special visits having to do with scientific and academic endeavors.


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For access information contact: Professor David. L. DeJarnette, Curator, Mound State Monument, Box 277, Moundville, Alabama 35474.

### MUSEUM

**University of Mississippi**
The facility consists of a collection of historical material and documents, many relating to Oxford and events of the Civil War in this vicinity; paintings, costume and Victoriana collected by members of the Buie and Skipworth families. This is one of the largest and finest collections of dolls of all periods in existence. The facility contains traveling exhibitions of art from other museums as well as exhibitions of works created or collected by local artists and residents. There are art classes for residents of the Oxford area. The museum is open daily except Monday.

Visiting scholars and the general public are eligible to use the facility. There is no admission charge. Groups wishing to visit the museum should contact the Curator to arrange a day and time, in order to avoid conflicts.

For access information contact: Mrs. George Eatman, Curator, Mary Buie Museum, 510 University Avenue, Oxford, Mississippi 38655.

### MUSEUM OF GEORGIA FOLK CULTURE

**Georgia State University**
The museum emphasizes early and recent examples of folk crafts produced throughout the state.

The museum is available to all interested persons or groups on an appointment basis. As the collection is personal property and not insured, no loan arrangements can be considered at this time, with the possible exception of a few duplicate items.

For access information contact: Dr. John A. Burrison, Assistant Professor of English and Director of the Georgia Folklore Archives, Georgia State University, Atlanta, Georgia 30303.

### PERSONAL IMPROVEMENT LABORATORY

**University of South Carolina**
The facility is a personal improvement laboratory using tutorsystem equipment. It uses the programmed motivational system for effective individualized instruction. This system can be used from pre-school through post graduate work. It will be available for faculty, staff, students, and undergraduate and graduate assistants. The laboratory is run by graduate assistants and open at all times.

Faculty, graduate students, and staff will be eligible to use the facility.

For access information contact: Dr. Albert V. Mayrhofer, Associate Dean, College of Education, University of South Carolina, Columbia, South Carolina 29208.

## PROGRAMMED LOGIC FOR AUTOMATIC TEACHING OPERATION [PLATO]

**Mount Saint Mary's College**

PLATO is a computer-based teaching system which provides teachers a means for individualizing student instruction. The four terminals at MSM, which are also available for faculty research, are remote units which are linked by phone to the University of Illinois at Urbana-Champaign and a CDC 6400 computer system. The student terminals utilize a plasma panel, a high speed individual slide selector, and a random-access audio device. This is the only computer assisted instruction (CAI) system of this nature in existence and MSM will be the first campus in the East to have PLATO terminals.

Interested individuals or groups may come to see the systems and experience it in use. There is no financial charge.

For access information contact: Dr. Michael H. Scheerer, Director of Counseling Services, Mount Saint Mary's College, Emmitsburg, Maryland 21727.

## REGIONAL INSTITUTE OF SOCIAL WELFARE RESEARCH

**University of Georgia**

The facility is a multidisciplinary Institute serving the eight states comprising Region IV of HEW (Mississippi, Alabama, Tennessee, Kentucky, Georgia, Florida, North Carolina, and South Carolina). Current research is concentrated on protective services for children, and development of management systems for state departments of social services and social welfare policy aspects of these problems. Technical assistance is provided by staff to federal, state, and local governments on research priorities, research design and program evaluation.

Opportunities exist for joint collaboration and/or doctoral dissertation work with faculty and students. Research consulting and technical assistance is provided to individuals without cost within limits of available staff time.

For access information contact: Dr. George Thomas, Regional Institute of Social Welfare Research, 1260 S. Lumpkin, University of Georgia, Athens, Georgia 30601.

## RURAL LIFE MUSEUM

**Louisiana State University**

A collection of buildings and artifacts serving as a replica of a plantation compound of the early 1800's.

The facility is available to serious researchers.

For access information contact: Director, Information Services, Louisiana State University, Baton Rouge, Louisiana 70803.

### SCHOOL PLANNING LABORATORY

**University of Tennessee**

The facility, an integral component of the College of Education, assists school systems, colleges and public agencies in delineating educational priorities and assessing facility needs; conducts research in curriculum development, site selection, financial management, and maintenance; and disseminates information, through classroom instruction and educational specifications, for viably implementing the planning process. The primary function of the School Planning Laboratory is to assist school systems and colleges in resolving physical plant problems which arise while attempting to renovate old school facilities, or plan new areas to meet the needs and demands of changing educational programs.

For access information contact: Dr. Charles E. Trotter, Jr., Director, School Planning Laboratory, Post Office Box 8530, University of Tennessee, Knoxville, Tennessee 37916.

### SPECIAL EDUCATION CENTER

**Louisiana Tech University**

A multidisciplinary center serving as a nucleus for comprehensive special education programming in a seven parish area of north central Louisiana. The Center provides consultative services to public schools relative to special education needs, teacher preparation in special education, and clinical assessment and recommendation on individual children.

Special educators, social workers, psychologists, speech pathologists or audiologists, pediatricians, opthalmologists, neurologists, pediatric nurses, public health administrators, and graduate students in these areas are eligible to use the facility. Only one person at a time can be accommodated due to space limitations.

For access information contact: Dr. Virgil Orr, Vice President for Academic Affairs, Louisiana Tech University, Ruston, Louisiana 71270.

### SURVEY OF CHINA MAINLAND PRESS

**University of South Carolina**

The Institute of International Studies receives Survey of China Mainland Press and several other copies of translations from mainland Chinese magazines and from Japanese periodicals produced by the National Technical Information Institute of the Department of Commerce. Subjects covered are mostly political but include also economic and cultural questions.

Faculty and graduate students are eligible to use the facility.

For access information contact: Professor Bruce Marshall, Director, Institute of International Studies, University of South Carolina, Columbia, South Carolina 29208.

## THERAPEUTIC CAMP

**The University of Alabama**
Camp Ponderosa is located atop Lookout Mountain 2,000' above sea level near Mentone, Alabama. The camp facility provides an ideal setting for therapeutic camping. It is situated on 80 wooded acres surrounded by several thousand acres of forests which are available to the camp for hikes, natural explorations, and overnight camping. The camp is divided by a small clear river which has been dammed to provide swimming and boating.

For access information contact: Department of Psychology, The University of Alabama, Box 6234, University, Alabama 35486.

## URBAN AFFAIRS COLLECTION

**University of Baltimore**
The Baltimore Region Institutional Studies Center collects and maintains specialized holdings in Urban Affairs, including records of many organization in the Baltimore metropolitan area.

For access information contact: Dr. W.T. Durr, Director, Baltimore Region Institutional Studies Center, University of Baltimore, Baltimore, Maryland 21201.

## URBAN STUDIES CENTER

**Tulane University**
The Center is designed to provide interdisciplinary focus for research and training in urban and metropolitan problems. Particular attention is given to the New Orleans Area and the Gulf South region. Activities of the Center are of interest to a variety of disciplines including sociology, political science, economics, architecture, civil engineering, social work, public health, law, and business administration.

Library and other resources are made available without charge to faculty members and graduate students from other institutions who have a legitimate need.

For access information contact: Dr. William W. Shaw, Director, Tulane Urban St udies Center, Tulane University, New Orleans, Lousiana 70118.



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## ANGLO-AMERICAN ART MUSEUM

**Louisiana State University**
The facility houses the principal permanent art collection of the university. The collection consists primarily of English and American art dating from the 17th through the 20th centuries. This is the only art museum in the state having period rooms. It has been one of the leaders in the research and exhibition of the art from the lower Mississippi River Valley.

Faculty and students are eligible to use the facility. Objects may be loaned to museums for special exhibitions. The borrower is required to pay all crating, transportation and insurance expenses.

For access information contact: Dr. H. Parrott Bacot, Curator, Anglo-American Art Museum, Louisiana State University, Baton Rouge, Louisiana 70803.

## ARCHIVE OF NEW ORLEANS JAZZ

**Tulane University**
This is a collection of more than 23,000 records; 12,000 sheet music pieces; 9,000 reference items such as books, serials, and catalogs; 24,000 archival items such as photographs, posters and notes; 1,400 reels of interviews with musicians or people interested in music. All items deal with New Orleans jazz.

All interested scholars are eligible to use the facility.

For access information contact: Dr. Richard B. Allen, Curator, Achive of New Orleans Jazz, Howard Tilton Library, Tulane University, New Orleans, Louisiana 70118.

## ARROWMONTH SCHOOL OF CRAFTS

**University of Tennessee**
This is a summer craft program with undergraduate and graduate credit offered through the University of Tennessee. Nationally and internationally recognized craftsmen are the instructors. Instruction is offered in the following media: ceramics, weaving, textile design, metal design, wood, enameling, craft media, off-the-loom techniques, and macrame. Special workshops in craft related areas may be arranged.

Graduate and undergraduate students are eligible to use the facility.

For access information contact: Miss Marian Heard, Director of Arrowmont, Crafts and Interior Design, College of Home Economics, University of Tennessee, Knoxville, Tennessee 37916.

## CENTER FOR SHAKESPEARE STUDIES

**University of South Carolina**
The center houses the editorial offices of the 42-volume South Carolina Shakespeare, the annual **Shakespeare Studies** and the South Carolina monograph series. In addition it is the executive office of the

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Shakespeare Association of America. The center is available for dissemination of information regarding Shakespeare's life and times and work as well as for teaching aids curriculum program planning.

Faculty, graduate and advanced undergraduate students are eligible to use the facility. There is no charge for using the facility but users are expected to pay for expendables.

For access information contact: Dr. J. Leeds Barroll, Director, Center for Shakespeare Studies, University of South Carolina, Columbia, South Carolina 29208.

## COLLECTION OF PHOTOGRAPHIC SLIDES

**The University of Georgia**
School of Environmental Design has a permanent collection of 6,000 photographic slides of landscaping, gardens, urban design, plants, parks, recreation areas, roadside development, architecture and environmental design.

Written request and approval of the Dean is necessary to use the facility.

For access information contact: Mrs. Claris Ingersoll, Slide Librarian, School of Environmental Design, LAR Building, University of Georgia, Athens, Georgia 30601.

## COMMUNICATION INSTALLATIONS

**The University of Georgia**
The School of Journalism has three television and five audio studies for production of programs in color capable of recording in virtually all formats and facilities for monitoring foreign and domestic short wave aural and teletype transmissions. Through the "Television Production Laboratory" the School of Journalism provides services in radio, television, audio-visuals and film.

Charge will be based on costs.

For access information contact: Dr. Worth McDougald, Henry W. Grady School of Journalism, The University of Georgia, Athens, Georgia 30601.

## COMPUTERIZED ELECTRONIC MUSIC LABORATORY

**West Virginia University**
The laboratory includes facilities for computer generation of music and for generation of music using synthesizer. The computer music is generated using procedures developed at The Bell Telephone Laboratories. The equipment includes an IBM 360-75 computer and an IBM 1827 Digital-to-Analog conversion system. The synthesizer used for analog generation is the Ironic Putney.

Faculty, students, visiting scholars and artists are eligible to use the facility. At the present time, there is no financial charge for using the facility.

For access information contact: Dr. Richard E. Duncan, Dean and Director, Creative Arts Center, West Virginia University, Morgantown, West Virginia 26506.

## DELIUS HOUSE

**Jacksonville University**

The Delius House stood for three-quarters of a century at Solano Grove, 35 miles south of Jacksonville. It was moved to Jacksonville University in 1961. It is now a shrine for music lovers. Each year in February the Delius Festival of Music is held on campus. The House is opened at this time to the public.

There is no charge. Tours may be arranged.

For access information contact: Dean Frances Kinne, College of Fine Arts, Jacksonville University, University Boulevard, North, Jacksonville, Florida 32211.

## FIREMENT TRAINING CENTER

**Louisiana State University**

The facility consists of a 5,500 square foot administration building with classrooms, laboratory, and visual aid facilities for holding special training classes. There are offices for the coordinator, six associates and secretaries. The training grounds consists of approximately 25 acres of land, containing various burn areas for training classes for both municipal and industrial firefighters, a water pond and warehouse. There is capacity for training approximately 250 people at one time. The grounds also have fire mains and fire hydrants used in training classes. The facility is used for research and development of fire fighting techniques and equipment.

For access information contact: Carrol L. Herring, Coordinator, Firement Training Program, 6868 Nicholson Extension - Route 3, Baton Rouge, Louisiana 70808.

## FURTWANGLER COLLECTION

**Rice University**

A collection of more than 100 volumes of recordings and tapes devoted to the art of the great German conductor, Wilhelm Furtwangler (1886-1954). In addition to virtually every commercial recording, many rare and unique items taken from war-time broadcasts and private sources are part of this growing collection. Only two other collections are known to equal these materials—the official German Government archives and the Furtwangler family holdings in Switzerland.

University libraries desiring tape copies of works from the Furtwangler Collection are welcome to submit their requests. For materials of a rare and unique nature, copying will not be allowed except by prior arrangement with the Music Librarian.



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For access information contact: The Music Librarian, Fondren Library, Rice University, Box 1892, Houston, Texas 77001.

### GARDEN FOR THE BLIND

**Clemson University**
The Garden for the Blind is a part of a 52 acre development maintained as part of the total Horticultural Gardens. It has a dual use as a garden which aids in telling the historical importance of many of the crops which have been grown in South Carolina as well as an area where blind students may study various facts of horticulture. All areas are marked in Braille and blind students may move through the area unaided.

All interested individuals are eligible to use the facility.

For access information contact: Dr. T.L. Senn, Head, Horticulture Department, Clemson University, Clemson, South Carolina 29631.

### INSTANT DATA ACCESS CONTROL SYSTEM

**University of Houston**
The IDAC, through a computer, prepares quick indexes to microfilmed information in the databank. The databank includes a trade name index with source names and addresses for manufacturers' specifications, details and other product literature as well as various bibliographies, research reports, selected codes and standards, and ones own specifications and drafting details.

The IDAC will be available to outside individuals when it is not being used by the College of Architecture.

For access information contact: Dean, College of Architecture, University of Houston, Houston, Texas 77004.

### MUSEUM OF ART

**Duke University**
The holdings of the Duke University Museum of Art include the following: the Ernest Brummer Collection of medieval and Renaissance sculpture and decorative arts containing more than 250 pieces, the Paul A. Clifford Collection of Pre-Colombian Art of South and Central America, the Dr. and Mrs. James Semans Collection, the Colonel and Mrs. Van R. White Collection of Oriental Art, the Duke University Classical Collection, and the Duke University graphic collection.

The collections may be studied on the premises by interested scholars. The borrower assumes freight and insurance expenses. Also, individual pieces may be lent to other institutions.

For access information contact: Dr. W. K. Stars, Acting Director, Box 6877, College Station, Durham, North Carolina 27708.



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### RESPIRATORY DUST MONITORING AND PULMONARY FUNCTION MEASURING LABORATORY

**North Carolina State University**

Dust generated by continuous feed cotton carding system can be monitored and collected. A spirometer is available on the premises for pulmonary function testing of human subjects exposed to dust in the test room.

Qualified researchers are eligible to use the facility. Sharing arrangements are made on an individual basis.

For access information contact: Dr. M. R. Shaw, Assistant Dean for Research, School of Textiles, North Carolina State University, Raleigh, North Carolina 27607.

### SOLAR MACHINE

**Tuskegee Institute**

The facility is used for study of all relationships between sun and building form and orientation.

Faculty or graduate students interested in physical environmental factors study are eligible to use the facility. No charge, but users will have to furnish testing simulator, camera, and film. Use will have to be coordinated with on-going activities.

For access information contact: Dr. Theodore J. Settle, Director, Operations, Analysis and Research, Tuskegee Institute, Tuskegee, Alabama 36088.

### TEXAS EDUCATIONAL MEDIA PROGRAM

**University of Texas**

The Texas Educational Media Program is a consortium of eight colleges and universities that share a microwave television network for providing direct instruction and enrichment experiences. In addition to a wide variety of videotaped and filmed resources, there is the capability of live instruction with telephone talk-back between the origination studio and viewing classrooms.

Facilities can be made available to anyone for educational activities, either as a live, real-time television production facility and transmission network, or as a production facility for videotaping studio work. As a live interconnect network, any additional school would have to become connected to the system; as a television studio production facility from which videotapes would emerge, cost arrangements would depend entirely on the complexity of the television production.

For access information contact: Dr. Robert F. Schenkkan, Director, Texas Educational Media Program, University of Texas, Austin, Texas 78712.

## TEXTILES AND CLOTHING LABORATORY

**University of Tennessee**

This is a research and service facility in the area of consumer problems related to textiles and clothing. Agriculture Research Service. The laboratory also sponsors research with educational institutions and independent laboratories. It provides limited research experience for graduate students.

Appropriate departments and graduate students are eligible to use the facility. The charges are negotiable.

For access information contact: Mr. Austin Bullock, Acting Director, USDA Textiles and Clothing Laboratory, 2005 Lake Avenue, Knoxville, Tennessee 37916.

## TEXTILE PROCESSING SYSTEM

**North Carolina State University**

A system for processing short and long staple fibers, continuous filament, texturizing, weaving, knitting, tufting, bonded-webs, stitch bonding, electrostatic flocking, open end spinning, noblewood wet former of sheet materials such as paper and fabrics.

Available to qualified researchers on an operational cost basis which ranges from $100-$200 per day. Availability depends on prior commitment to teaching and research.

For access information contact: Dr. M. R. Shaw, Assistant Dean for Research, Textiles, 108 Nelson, North Carolina State University, Raleigh, North Carolina 27607.

## TEXTILE RESEARCH CENTER

**Texas Tech University**

The facility is fully equipped with modern instruments and machinery for conducting research on all types of textile fibers, yarns, and fabrics. This includes a Materials Testing Laboratory. Processing Laboratories for producing yarns from cotton, man-made fibers, and animal fibers; a special laboratory currently being used for developing twistless yarn; two laboratories for preparing yarns to be woven or knitted; a Weaving Laboratory with mill-sized looms; a Knitting Laboratory for developing knitted fabrics; and a Chemical Finishing Laboratory for dyeing, bleaching and finishing all types of yarns and fabrics. The Finishing Laboratory is known to be the best equipped and most versatile of any facility outside the textile industry itself.

Faculty (in Home Economics, Chemistry, Biology and Engineering) and graduate students (in Textile Engineering and Chemical Engineering) are eligible to use the facility.

For access information contact: Dr. James S. Parker, Director, Textile Research Center, Post Office Box 4150, Lubbock, Texas 79409.

**TEXTILES LIBRARY**

**North Carolina State University**

The Burlington Textiles Library contains over 12,000 textbooks, monographs, and bound periodical volumes. Subjects cover fiber and textile technology, apparel manufacturing and related subjects. Especially noteworthy is a collection of 3,044 fabric samples, the only such collection known to be available for public use in the United States.

Books may be borrowed on interlibrary loan.

For access information contact: Mr. James Baker, The Librarian, 112 Nelson — North Carolina State University, Raleigh, North Carolina 27607.

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